

small air forces observer

vol. 23 no. 3 (91)
October 1999

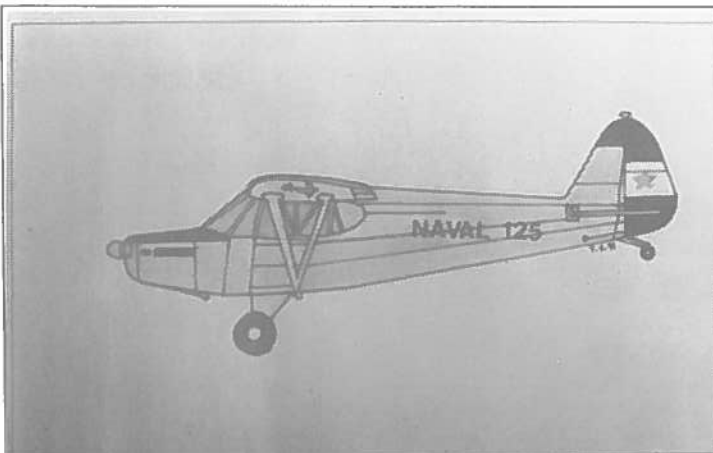
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Commonwealth Wirraway
Spanish Tupolev SB-2
Brazilian Vengeance
Bulgarian Avia B-71
Paraguayan Pipers
Argentine MS 760
Shavrov Sh-2

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SMALL AIR FORCES OBSERVER

The Newsletter of the Small Air Forces Clearing House

Contents

Wants & Disposals	75
Abstracts	76
Aerei Update	79
Wants & Disposals	75
Commonwealth Wirraway (Owers)	81
Brazilian Vengeance (Terlizzi)	85
Bulgarian Avia B-71 (Fregosi)	87
Spanish Tupolev SB-2 (Massey)	89
Argentine MS 760 (Marber)	90
Paraguayan Pipers (Sapienza)	92
Shavrov Sh-2 (Devins)	93
Books (Rumanian AF; Croatian AF; Campagne des Pays-Bas; Argentine Curtiss Hawks; Acrobatics Cruz del Sur; Translado de Aeronaves Militares; Fokker D.21; Yak-1/Yak-7; He 115; Beechcraft C-45; Fizzir; Arsenal VG.33; Polish Military Equipment)	94
Magazines (Aero Journal; Aero Magazin; Suomen Ilmailuhistoriallinen Lethi)	98
Kits (Payen PA-22; Arado Ar 65; Avia B.34; Avia Ba.422; Boeing 307; Sikorsky S.XVI; Sopwith 1-1/2 Strutter; Aviatik D.I; HB D.I)	99
Decals (International Alouette III's; Finnish roundels; Sonia & Nick)	101
Miscellaneous (Esquadriha da Fumaca video; Brazilian stamps)	102
Letters (Treichel; MacGregor; Hagedorn; Owers; Person; IPMS-Ecuador)	102

SAFO EDITORIAL POLICY: The purpose of the SAFCH is to "promote interest in the history and modeling of the aircraft of the smaller countries". In support of this goal, the SAFCH encourages international cooperation in researching aviation history, both military and civil, from all periods of time, and for all the smaller countries. In return for this support, members are asked to submit occasional progress reports for publication in the SAFO. While the final results should appear in the most prestigious publication possible, it is requested that the SAFCH be mentioned (with address) in the article and that SAFO be afforded the opportunity of reprinting the material. Article published in SAFO can be reprinted provided permission of the author is obtained and the SAFO is identified in the reprint.

SUBSCRIPTION RATE: Subscription to the current volume of the SAFO is US \$13.00 for 4 issues in the USA and elsewhere via surface mail. For the cost of air mail delivery, contact the editorial office, or send \$22.00 and any surplus will be credited to your account. Payment should be made in cash, by

International Money Order, or by a check drawn on a bank with a subsidiary in the US made payable to "Jim Sanders". New subscriptions begin with the next issue published after payment is received; if you desire otherwise, please specify which issues are desired. Send remittance to Jim Sanders, 27965 Berwick Dr., Carmel, CA 93923 USA.

BACK ISSUES: Either back issues or Xerox copies of out-of-print issues are available for all issues of the SAFO published at \$3.00 each. For a list of all issues and their content, send two 1st class stamps (or 2 IRCs) to the editorial office.

MEMBERSHIP LIST: To promote cooperation between members, a list of SAFO member's names and addresses is available to SAFCH members for \$1.00 plus postage (\$1.00 surface or \$2.00 air mail).

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SMALL AIR FORCES OBSERVER (USPS 439-450) is published quarterly for \$13.00 per year by the Small Air Forces Clearing House, 27965 Berwick Dr., Carmel, CA 93923. Publication entered at Carmel Valley, CA 93924. **POSTMASTER:** send address changes to Small Air Forces Clearing House 27965 Berwick Dr., Carmel, CA 93923.

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LOST MEMBERS: Anyone knowing the whereabouts of the following 'lost' SAFCH members please inform the editorial office (last known address included): Eric Stoutenburg, Ft. Carson, CO; Curtis Marzolf, Bulverde, TX; E. Tronn, Montreal, PQ Canada; Alain La Pierre, Maracay, Venezuela; Michael Parr, Prince George, B.C.

Canada; Richard Harrison, Stroudsburg, PA; Ellis Estes, Alexandria, VA. Gary Lepinski, Minneapolis, MN; Ludoric Lamouroux, Montry, France; Scott Fraser, Sidley, BC, Canada; Andrew Eichmann, Chicago; Matthias Rothe, Berlin, Germany.

SAFO WEB GUIDE: John MacGregor write, "With so much of SAFCH interest on the net these days, how about including a review of net sites in each issue of SAFO? To kick it off, I'll suggest a couple: For books, magazines, models, etc. from Russia, Ukraine, etc. at very good prices, have a look at www.aviapress.com. For those who have a liking for the Brewster Buffalo (and who doesn't?) there's www.danford.net/Buffalo.htm." [Editor's note: Great idea John. If anyone wants to become an "associate editor" by writing a -web-web-web- section for each issue of SAFO, contact the editor.]

SAFO WEB SITE: Mario Bartoli has started a new service on the SAFO Web page (www.bartoli.com/safo/). He has initiated a discussion section where all interested people can post requests for information and get answers. All the postings can be read by every visitor to the site. This service supplements the requests for help published in SAFO. This will provide another means for people interested in the small air forces to keep in touch.

COVER COMMENTS: The recently-restored North American SNJ-5C (BuNo 090662) at the Argentine Naval Museum at Comandante Espora. The aircraft is painted as 0462/2-A-304 in the colors of the 3rd Attack Squadron "The Four Aces" circa 1959. The aircraft is yellow overall with black serials, propeller, and anti-glare panel. The landing-gear legs and wheel hubs are white. The propeller tips are white/red/white, the propeller hub silver, and the engine crankcase medium grey. (Jorge Nunez Padin)

LAST CHANGE SALOON: To help clear the shelves, a few titles from the Estate Sale will be offered each issues. If they are not sold by the time the next issue is published they will be tossed out. These are free, you just pay the postage. If you need specific issues, write for quote. Soviet Military Review (21 issues from 8/68 to 8/75); Armed Forces (8 issues from #1 to #11); Pacific Defence Reporter (2 issues 2 & 3 78); Aerospace International (6 issues 3/75 to 4/78); Defence (UK) (2 issues 6 & 7 78); Militarteknik (DDR) (8 issues from 8/70 to 3/79).

-wants&disposals-wants&disposals-wants&disposals-wants&disposals-wants&disposals-wants&disposals-wants&disposals-

"I have been invited to co-author a book with Philip S. Jowett on the Japanese-allied forces of World War II. Mr Jowett recently published Chinese Civil War Armies 1911-49 in the Osprey Men-At-Arms series, and obviously shares my interest in small and more or less obscure military forces. The book will include as much information -- and as many illustrations as we can find and use -- on the air forces of China (Nanking), Manchukuo, Thailand, I Indonesia, and Burma. As I've mentioned in my previous letters, we know that the Japanese trained

Burmese personnel with the intention of creating an air force although we have found no record of any aircraft actually being turned over to the Burmese with Burmese insignia applied. The best known examples of Indonesian aircraft were repainted with Indonesian insignia after 15 Aug 45, but since the Japanese had previously organized and trained Indonesian ground forces (and some Japanese made arms available to the Indonesians immediately after 15 Aug 45) it seems reasonable to include them as well.

"That brings me to the purpose of this letter. Much of what I have on the aircraft of Manchukuo and Thailand comes either from back issues of SAFO or from other SAFCH members (whom I will attempt to contact directly). Mr. Jowett has warned me that this topic is not a 'money maker' but we want it to be as complete and accurate as possible. I would very much like to hear from anyone with information on the air forces of Burma (1943-

Continued on page 101.

AUSTRALIA

AUSTRALIAN PLASTIC MODELLERS ASSOCIATION (APMA, PO Box 51, Strathfield, NSW 2135; 4 issues sea mail A\$27; air mail A\$30). 1/99 (28 pages) @BODYTEXT2 = *In Miniature* (IPMS NEW SOUTH WALES, PO Box 637, Broadway, NSW 2007; 4 issues A\$30.00 air mail). 2/99 (28 pages) "Sopwith Sequel" one page on the Baby including a side-view drawing of the Schneider. "Aeronavale Update" 5 pages including 2 side-view drawings of Breguet Bizertes. "Flying Floating French: Part 4 - L'Aeronavale with the Allies 1943-45" 4 pages including 5 side-view drawings (Latecoere 298, Catalina, Ventura, Wellington, and Sunderland). "Rare Bear" 4 pages on unlimited racing Bearcat including 3 pages of multi-view drawings. "Messerschmitt Bf 109 Variants: a 5-page table.

INMINIATURE (P.O. Box 949, Glebe, NSW 2037. E-mail: peters@sue.econ.usyd.edu.au). 14/4 May 1999 (32 pages) "Gorgeous George" 7 pages including 2 photos and drawings of the markings carried during various phases of its career by the Lancaster that survived 90 missions of Germany and is currently on display in Australia. "Fallback to a Legend" 6 pages on building the 1/48-scale Falcon vacuum kit including 9 photos of the model and a page of sketches. "The Big Sting" 6 pages on building the Matchbox 1/72-scale Me-410 including 10 photos of the model and sketches for detailing the kit.

AUSTRIA

OFH NACHRICHTEN (Oesterreichische Flugzug Historiker, Pfenniggeldf. 18/2/14, A-1160 Wien. Write for free sample.) 20-Year (77/97) Index available. 2/99 (36 pages) "Grazer Fliegerschule 1930-1934" 6 pages including 5 photos and one side-view drawing (Klemm L 25 and Kalkert KE 7 & KE 14). "KUK Seeflieger 1914-1918" 2 pages with 4 side-view drawings (Phoenix D.I D.IIa, & D.III).

BRAZIL

EM ESCALA (IPMS Brazil, Rua Lucidio Lago, 457/206 - Meier - Rio, RJ, CEP 20780-020. Subscription is \$10.00, but they prefer kits or accessories. Send to Antonio Pereira Linhares at the above address.) #92 1999 (16 pages) "Perfil e Detalhes: F-84E Thunderjet" one page of drawings of ejection seat, landing gear, & rocket racks. "Heinkel He 70 Blitz" 3 pages including 2 photos and a 2-view, scale drawing of 'D-UMIM'. "Focke Wulf Fw 200 Condor" 5 pages including 4 photos and a 2-page, 3-view, scale drawing of 'PP-CBI' 'Abaitara' (with English translation).

CZECH REPUBLIC

AERO PLASTIC KITS REVUE (Vydavatelství Model Press, ul. 1.maje 11, 709 00 Ostrava-Mar.Hory, Czech Republic. 6 issues #3 surface or \$45 air.) #65 1998 (76 pages) "Bristol Beaufort" (1.cast) 7 pages including 10 photos, 3 pages of 1/72-scale multi-view drawings, and 4 color multi-view drawings. "IDF Ching Kuo" 9 pages including 8 photos, cutaway drawing, a 2 page scale multi-view drawing, and 2 multi-view color drawings. "Pilatus PC-6" 5 pages including 3 photos and 3 color multi-view drawings (Bophuitatswana, Oman, & RAAF). "Fairey Gannet AEW.3" 8 pages including 11

photos, a 2-page multi-view scale drawing, 2 color multi-view drawings. "Vojenske letectvo Chorvatska v letech 1991 az 1996" (1.cast) 6 pages on the Croatian AF including 8 photos 9 color side-view drawings (An-2, Cessna Ag-Wagon, SOKO J-20 Kraguj, Reims-Cessna F.172M, Piper PA-18 Super Cub, MiG-21bis, & MiG-21UTM). "Fokker D XXIII" 7 pages including 4 photos, cutaway drawing, a 2-page 1/72-scale, multi-view drawing, and 3 color multi-view drawings. "Le petit Francais ve Finsku" 4 pages on Finnish Caudron-Renault CR.714 including 4 photos, a one-page 1/72-scale multi-view drawing, and one color multi-view drawing.

#68 1998 (76 pages) "Kawasaki Ki-100" 9 pages including 8 photos, 2 pages of 1/72-scale 4-view drawings, and 3 color side-view drawings. "Vojenske letectvo Libanonu 1949 az 1997" 4 pages including 6 photos and 6 color side-view drawings (Chipmunk, Vampire, Magister, Hunter, Mirage III, & AB.212). "Petadvacitky nad Strednim vychodem" 5 pages including 5 photos of Soviet MiG-25 and a side-view drawings of an Egyptian MiG-25R. "Sopwith Triplane" 7 pages including 11 pages, a 2-page 1/48-scale 5-view drawing, a color 4-view drawing (N533), and a color side-view drawing (N534). "Curtiss Model 77 SBC Helldiver" 4 pages including 3 photos, 1/72-scale 4-view drawing, color 4-view drawing (USN 'S-S-7), and color side-view drawing (151MO8). "Fokker G-1" 8 pages including 16 photos, 2 pages of 1/72-scale 5-view drawing, a color 4-view drawing (319), and a color side-view drawing (X-2). "Aermacchi MB-339" 7 pages including 4 photo, 2 pages of scale 3-view drawings, color 3-view drawing of RAAF MB-339C, and 2 color side-view drawings of Italian a/c. "Hubert 'Hub' Zemke" 5 pages including 6 photos and 5 color side-view drawings (P-47B, C, D, P-51D, & P-38J). "Od Havaje k Japonskym ostrovum" (2 cast) 7 pages including 13 photos and 3 color side-view drawings (P-61). "Lysander ve finskych sluzbach" 4 pages including 7 photos, color 3-view drawings (LY-120,) and color side-view drawing (LY-121).

#69 1998 (76 pages) "Lietadla majora Shoma" 3 pages including 6 photos and 3 side-view drawings. "Vojenske letectvo Tuniska 1960-1991" 6 pages including 11 photos and 10 color side-view drawings (Safir, SF-260, MB-326, L-59 Albatros, F-86F, Alouette III, C-103H, UH-1H, & F-5E). "Fokker G-1" (cast 2) 8 pages including 14 photos, 1/72-scale 3-view drawing of G-1B, and 4 color side-view drawings with one plan view. "JuRom" Stihaci bombardier z Balkanu" 14 pages including 22 b&w and 5 color photos, 2 pages of scale multi-view drawings, 2 color multi-view drawing, and 5 color side-view drawings showing the Soko J-22/IAR-93 in old & new Romanian and Yugoslav insignia and in the insignia of Krajina. "Spitfire Typ 356" 6 pages including 6 b&w and 6 color photos, 1/72-scale 5-view drawing, one 3-view and 2 side-view color drawings. "Jedenadvacitka" 8 pages including 16 photos, one color 3-view drawing (Czech), and 3 color side-view drawings (Soviet, Finnish, & Indian) MiG-21 F-13. "Hubert 'Hub' Zemke" (cast 2) 5 pages including 8 photos and 5 color side-view drawings. "Od Havaje k Japonskym ostrovum" 6 pages including 13 photos.

ENGLAND

IPMS MAGAZINE (Ernie Lee, 51 Ball Road, Hillsborough, Sheffield, South Yorkshire S6 4LZ, 6 issues for £20.00 (US subscription agent: Wise Owl Publications, 4314 West 238th St., Torrance,

CA 90505).

3/99 (48 pages) "Air Operations over the Philippines" 3 pages including 9 side-view drawings (Boeing P-26, Seversky P-35, North American A-27, Curtiss P-40B, Stinson SR9, Stearman 73L-3, & Martin B-10B). "Their Finest Hour" (Part IV) a 3-page review of the 1/72-scale Academy and Revell kits including side-view drawings of two Hurricane Mk II. "Two of a Kind" a 2-page comparison of the old Revell and new Hasegawa kits of the Nakajima Ki-49.

4/99 (48 pages) "Tutor for the Volunteers" 3 pages on building the 1/48-scale AeroClub Avro Tutor including 7 photos of the model. "Normandy Storch" 2 pages on Fi 156 in RAF markings including 4 side-view drawings. "Anti-Submarine Swordfish" 2 pages on building the 1/48-scale Smer Swordfish including 6 photos of the model. "Hudson Improvements" one-page letter on improving the Airfix kit including sketches.

INSIGNIA (Blue Rider Publishing, 43a Glasford St., London SW17 9HL, UK.) 4 issues £24.00 surface mail worldwide; £26.00 air mail USA/Canada; £28.00 Australia/Japan. IMO, Mastercard/Visa/Access, or US currency notes. Add £5.00 if paid by dollar cheque.

#12 Summer 1999 (36 pages) "Bosnian Air Arm Update" 7 pages including tables of aircraft used by both the Bosnian and Croat Federation Air Force (RZiPO) and the Bosnian Serb Republic AF (ViPO), 3 photos (Vipo Soko Galeb & Orao), 8 side-view drawings (RZiPO Mi-34, Mi-8, & Bell UH-1H; Serbian Krajina Mi-8 & Soko Gazelle and Vipo Gazelle), 5 insignia in color, and decals for RZiPO Mi-8, UH-1H). "Air Force Insignia #16: Turkey" 6 pages including 3 tables listing aircraft used from 1911-1925, 5 photos (Gotha WD-2 & -13 and Vultee V-11-GBT), 10 side-view drawings (Gotha WD-2 & -13, Nieuport 17, SPAD S.XIII, Junkers R-2, Caudron C.59, Curtiss Hawk II, & Breguet 19), and 10 b&w drawings of insignia. "Serial Systems #2: Chile - The Early Years" 4 pages including listing all individual aircraft 1913-1926, and 10 side-view drawings (Bleriot XI, RAF SE5a, Avro 504K, & Aircro DH9). "DAR Aircraft - Part 4" 2 page multi-view scale drawing of the DAR-10A & F. "Letters and Questions" a 4-page letter by a Professor of History on the history of early Chinese, Ukrainian, and Polish military aviation including 4 side-view drawings of aircraft West Ukrainian People's Republic (Nieuport 11/16, H-B C.I, & LVG C.VI) and 4 color drawings of insignia. [Editor's note: The author destroys the oft-reprinted notion of a 'Cochin Air Force' (Cochin is in southern India). He gives the correct name as the "National Government of China Air Force". He also presents a Polish insignia predates those form Warsaw, Krakow, & Lwow.] "Asen Jordanov-1" one-page 3-view scale drawing of one of the first military a/c built in Bulgaria. "Reader's Photographs" one page with 3 photos (Lithuanian Anbo VIII and Bulgarian Friedrichshafen FF33A & Rumpier 6.B-1). "Air Force Insignia #19: Rhodesia" 1/2-page with 5 insignia in color (complete article in next issue).

SWEDISH AIRFORCE SIG (Ted Burnett, 19 Tintagel Close, Parkside Grange, Cramlington, Northumberland, England NE23 0NZ. Subscription £4.00 UK, £6.00 Europe, \$16.00 USA. Include your SAFCH number).

#28 Autumn 1998 (40 pages) "The J11 - Fiat CR 42" 7 pages including table of individual a/c his-

tories. "Heinkel's Swedish Seaplanes" 3 pages including seven 1/100-scale side-view drawings of the S 2 to S 5. "Svenska Aero AB Heinkels in Profile" 3 pages with 8 side-view drawings (Swedish & Latvian). "Klemm and the Swedish Sk 15C Floatplane" 2 pages including one photo and 2 side-view drawings. "More Old Swedes" 2 pages on the Tulin D including scale drawings. "Tp85 Sud-Aviation Caravelle" 2 pages including 2 pages of drawings. "Colours & Markings J35J Draken in the Swedish Air Force" 8 pages including 2 pages of drawings. #29 Winter 1999 (36 pages) "A History of the Caproni CA.313 in Swedish Use" 7 pages including table of individual a/c. "German Fighters Shoot down a Swedish Reconnaissance Plane" 2-page account of Swedish Caproni crew's experiences on being shot down on 14 March 1944. "The Caproni 313" 2 pages on building the Italeri kit. "Gripen's Ancestor" 2 pages on modeling the Tulin K from the Revell Fokker E.III including 3-view drawing. "Backdating Heller's Saab Safir to Saab 201" 3 pages on using the Broplan conversion kit including 3-view drawing. "Swedish Flying Clothing 1900-present" 5 pages including 2 pages of sketches. "Modelling the Fiat CR.42 Falco" a 4-page reprint of Felice Rufolo's oft-reprinted article including a page of sketches and a 1/72-scale multi-view drawing. #30 Spring 1999 (40 pages) "Tp 54 Piper Chieftain" 4 pages including history, review of the Broplan kit, and a 1/72-scale 5-view drawing of Marinen '543'. "Mythical Griffins" 6 pages including drawings of design proposals and a drawings of the splinter-camouflage pattern for the Gripen. "Colours and Markings J35D Draken in the Swedish Air Force" 6 pages including 3 pages of drawings. "J35D(O) in the Austrian Air Force" 3 pages including a 1-page, 4-view drawing. "He 114: The Unheralded Heinkel" 6 pages including history of Swedish a/c, 2 side-view drawings, and kit reviews. "The Fieseler Fi 156: S14 Stork" a 2-page history.

FINLAND

Finnish Air Force Special Interest Group, c/o Niles R. Treichel, Ludigstr. 13, 27432 Bremervoerde, Germany.
No. 12+1 (10 pages) "Nordic Stringbag: Hover MF-11" 2 pages including review of Broplan kit and a 2-view drawing of the a/c in Finnish markings. "Finnish Bulldog" 2 pages in converting the Airfix Mk. II into a Finnish Mk. IV including 3-view drawing. "Finnish Po-2" 2 pages including side-view drawing of Finnish a/c. "French Beauty" 2 pages on Finnish Magister including 3 side-view drawings.

IPMS-MALLARI (IPMS Finland, PL 798, 00101 Helsinki 10; 6 issues \$20.00, no check accepted due to the high redemption costs).

#130 2/1999 (24 pages) "I-15bis" 5 pages including 9 photos of Finnish a/c. "Jees, Punamulta!" 6 pages including 21 photos of Finnish 2-seat MiG-21. {Editor's note: Interior color described as "Mainly infamous Russian turquoise".}

SUOMEN ILMAILUHISTORIALLINEN LEHTI (InScale 72, Makelankatu 5B10, 00550 Helsinki; Europe \$30, elsewhere \$35; payment by International Postal Order or in cash; no cheques of any kind accepted because of high redemption rates). Each issue includes a 2-page English summary.
2/1999 (24 pages) "Folland Gnat Mk.1" (Part 1) 6 pages including 5 photos. "Ferry Flight of a J3C Cub from England to Finland in summer 1951" (Part 2) 4 pages including 2 photos and a 1/72-scale 4-view drawing. "Hiller H-23B/C Helicopters in

Finland" 2 pages including 1 photo and scale 3-view drawing. "Soviet Hero 'Bogatshv' on Olontets Isthmus during spring of 1944" 2 pages with 2 side-view drawings (Soviet P-39Q & P-40E). "Stuka School at Rovaniemi" 2 pages with 2 side-view drawings (Ju 87D). "Imperial Russian Baltic Fleet Operations" 3 pages including 3 photos.

FRANCE

Aero Journal, Aero Editions, 50 blvd Paul Valery, 32500 Fleurance, France. Complete English translation of the two leading articles. US\$ 40.00 including air mail for one year (6 issues). Visa and Mastercard accepted. E-mail: aerjournal@infonie.fr.

#7 Juin-Juillet 99 (72 pages) "Dans l'enfer de Rabauk" (Hell Fires of Rabaul) 16 pages on the mission of 2 November 1943 including 20 photos and 10 color side-view drawings (B-25, J1N1 Irving, A6M3 Zeke, & P-38). "L'avion qui parlait" (Voice from the Sky) 4 pages on French C-47 flying propaganda missions over Vietnam including 7 photos and color 4-view drawing of "flying billboard". "Balkenkreuze sur les Balkans" 6 pages including 9 photos (4 in WWII color). "Pilots du dimanche" 2 pages with 10 color side-view drawings of ANG aircraft. "Camouflage et marques" 8 pages 9 photos, 2 color 3-view drawings (LeO 451 & Potez 637) and 4 color side-view drawings (D.501, C.635, MS.406, & LeO.451). "Auzainvilliers 1939-1940" 6 pages including 7 photos and 4 color side-view drawings (Potez 637 Bloch 174, & MS.406). "La Chasse Francaise 1939-1945 (7): Le CG III/2" 3 pages including 3 photos and table. "Black Cats" one page with color 2-view drawing of RAAF PBV and side-view drawing of USN Black Cat.

#8 Aout-Sep.99 (72 pages) "Le Glenn au combat: Premiere partie - De l'Aisne a l'Euphrate" (The Glenn Martin 167F) 18 pages including 25 photos, tables, color 5-view drawing, and 11 color side-view drawings. "Duex combats franco-italiens" 5 pages including 9 photos and 4 color side-view drawings (French P-47D and Italian Bf 109G). "Operation Beethoven: La symphonie inachevee" 5 pages including 6 photos and 2 color side-view drawings (Ju 88/Fw 190). "Les dents du ciel" 2 pages with 10 color side-view drawings of a/c baring shark teeth. "Les as de l'aviation: A l'abordage d'un B-24" 3 pages including 2 photos and 3 color side-view drawings (Ki-43). "Trois minutes d'esperance de vie" (Pilots Expandable) 4 pages including 7 photos and 4 color side-view drawings (DFS 230, Go 242, Waco CG-4, & Horsa). "La chasse francaise 1939-1945 (8): Le CGIII/2 Alsace (No. 341 Squadron)" 5 pages including 6 photos and 5 color side-view drawings (Hurricane, MS.460, & Spitfire).

Air Zone, Le Nouveau Mensuel de l'Air! (Air Zone Magazine, 53 rue Boissiere, 75116 Paris. E-mail: headland@airzone.net) A one-year subscription for 9 regular issues and two special issues is 405FF. Payment preferably by check drawn in FRF on a French bank, by draft or postal giro.) Each issue contains book and kit reviews and a one-page summary in English.

#26 (68 pages) "La Marine coreenne receptionne ses premiers Reims F 406" One page including a photo of a South Korean Navy's first F 406 Caravan II. "Un nouveau Mirage 2000 pour les 'Cigognes'" 8 pages including 12 color photos. "Crise du Kosovo" a special section consisting of 45 pages including table of bases and equipment used by air forces operating over Serbia and Kosovo with over 80 photos of aircraft from the USA, UK, France, Netherlands, Belgium, etc.

JETS: Toute l'Aeronautique Moderne (LELA PRESSE, 29 rue Paul Bert, 62230 Outreau, France. 420F for 12 issues).

#43 Juillet 1999 (52 pages) "Missions de Guerre sur la Serbie" 6 pages including 18 photos of French Mirages and Jaguars operating over Serbia. "Commentaires sur la Guerre au Kosovo" 3 pages including 11 photos of US a/c and one photo of a Spanish EF-18A. "Escadron HA-1: Le Bras Long de l'Escadre Chilienne" 4 pages including 12 photos of Chilean Super Pumas. "Les premiers Jets de l'OKB Lavachkin" 10 pages including 29 photos (La-7R, 126, 150, 152, 156, 174, 160, 168, 176, La-15, 190, 200, 250). "Le Centre d'Essais en Vol a Istres" 5 pages including 14 photos (Mirage 2000 & Rafale). "27 Ans Apres" 6 pages including 15 photos of Portuguese Epsilons and A-7s. "La Force Aerienne du Bangladesh" 4 pages including 16 photos (F-7, Magister, T-37, Bell 206, An-32, FT-7, FT-6, A-5, Mi-17, Bell 212, L-39Z, & PT-6). "Le 1^{er} Bataillon d'Helicopteres d'Attaque des Famel" 4 pages including 19 photos of Spanish Bo-105.

#44 Aout 1999 (52 pages) Color photos: Chilean Cessna O-1A and Mirage 50DC. "Voir Entendre et Frapper" 10 pages including 28 photos. "Des Skyhawks Singapouriens a Cazaux" 4 pages including 10 photos. "Le Bourget 1999" 6 pages with 16 photos. "Aviano: 79 Jours de Campagne Aerienne" 7 pages including 23 photos. "La Force Aerienne Argentine" 5 pages including 12 photos (Skyhawk, Mirage III, Paris, Pampa, Su-20, C-130, Pucara, & Canberra). "Operation Allied Force: L'USS Theodore Roosevelt en Guerre" 4 pages including 11 photos. "Plus de 25 Ans de Service piur les P-3 Orion Espagnols" 6 pages including 14 photos.

#45 Septembre 1999 (52 pages) "Les Derniers Crusader de la 12F" 8 pages including 23 photos. "Allied Force: La Guerre depuis l'Italie de Sud" 5 pages including 12 photos. "Pakistan Air Force Base Masroor" 6 pages including 15 photos (Mirage, F-7P Skybolt, & Alouette III). "Entretien avec le Commandant de la Base Israelienne d'-Hazor" 7 pages including 8 photos (F-16). "Mission contre les Narcotrafiquants" 7 pages including 15 photos (Argentine Gendarmeria Bell 47, Hughes, Piper, & Turbo Porter). "La Force Aerienne Hongroise" 5 pages including 14 photos (MiG-21, MiG-29, Mi-8, & Mi-24). "Australian International Air Show" 6 pages including 16 photos (RAAF F-111, F/A-18, PC-9A, & C-130). "SO-6025 Espadon: Marquette thermoformee au 1/48eme de Modelair" 3 pages including 9 photos of model.

AVIONS: Toute l'Aeronautique et son Histoire (LELA PRESSE, 29 rue Paul Bert, 62230 Outreau, France. 420F for 12 issues).

#76 Juillet 1999 (64 pages) "Histoire de l'Aeronautique Persane 1921-1941" 11 pages including 26 photos and 8 color side-view drawings (Junkers F 13a, A 20, & W 33, Polikarpov R-1 & R-5, DH-82A, and Hawker Audax, Hind, & Fury). "Les Dewoitine 520 Italiens" 12 pages including 17 photos. "Duex Mots sur un Camouflage Francais de 1940" 2 pages including 5 photos. "Le Morane-Saulnier MS 225 C1" (2^{eme} partie) 7 pages including 9 photos and 8 vintage sketches. "Il'ya Muromets" 7 pages including 18 photos (Russian and Soviet). "Le Blackburn Skua" (2^{eme} partie) 7 pages including 15 photos and 2 color side-view drawings. "Joppe Karhunen" 5 pages on Finnish ace including 13 photos (D.21 and Buffalo) and a color side-view drawings of his Buffalo. "Grumman F7F-3 Tiger-cat: Maquette AMT/ERTL au 1/48^{eme}" 3 pages including 11 photos of the model.

#77 Aout 1999 (64 pages) "Du nouveau sur les Caproni Ca 164" additional information of French

CA 164 including 4 photos and table. "Les avions japonais aux couleurs francaises" (1ere partie) 9 pages including 32 photos and 2 color side-view drawings (A6M-2N Rufe and E13A1 Jake). "Le Morane-Saulnier MS 225 C1" (3eme partie) 8 pages including 20 photos, color cover painting, and 3 color side-view drawings. "Des Nieuport 17 dans le ciel russe" 8 pages including 16 photos and 2+ pages of tables on history of individual aircraft. 10 pages including 11 photos, 2-page cutaway drawing, 2-page 1/72-scale multi-view drawing, 2 color drawings. "Un as italien de la chasse et des Stukas: Ennio Tarantola" 7 pages including 18 pages, table of victories, and color side-view drawing of his C.202. "Les unites de seconde ligne de la Luftwaffe en France" (1ere partie) 9 pages including 16 photos (Ar 66 & 68 and NAA 57) table of accidents. "Le MS-115: Maquette Heller au 1/72eme" 4 pages including 14 photos of the model. #78 Septembre 1999 (64 pages) "Retros du Mois" one page with 2 photos (Bulgarian Letov A.18 & Do 11). "Les avions japonais aux couleurs francaises: l'armee de l'Air" 12 pages including 25 photos (A6M2 Zero, G4M Betty, J2M Jake, Ki-43 Oscar, Ki-57 Topsy, L2D3 Tabby, Ki-51 Sonia, Ki-36 Ida, Ki-21 Sally, Ki-54 Hickory, Ki-46 Dinah, & Ki-86 Cypress) most in Japanese or "ATAIU-SEA" markings except for the Ki-43 & Ki-54), 2 color side-view drawings (Ki-43 & Ki-54), and table of all Japanese aircraft "utilises par l'armee de l'Air en Indochine". "La debacle des ambulanciers: mai-juin 1940" 4 pages including 11 photos (Bloch 81, Farman 192, Caudron Pelican, JG 42, & SAS 22/110). "Le Blackburn B-25 Roc" 7 pages including 13 photos and one color side-view drawing. "L'hydravion francais Hanriot 41" 6 pages on Yugoslav service including 10 photos and a 2-page 1/48-scale multi-view drawing. "Maurice Balasse: Un as belge de la chasse aux V-1" 12 page including 38 photos (Belgian Breguet 19, Fairey Fox, Fairey Battle, and RAF Spitfires). "Le Morane-Saulnier MS 225 C1" (4eme partie) 6 pages including 22 photos and 3 color side-view drawings. "Le bombardier B.XLVII de 1916" 4 pages in unique 4-engine Bleriot bomber including 8 photos.

GERMANY

MITTEILUNGEN (IPMS Germany, Bergengruenstrass 5-7, D-1000 Berlin 38; 12 issues DM 60.00 Europe, DM 65.00 USA, DM 70.00 Japan, DM 75.00 Australia).

2-99 (40 pages) "Special Hobby's Lockheed 10 Electra" 3 pages including 2 photos of model and one photos full-size Romanian Electra.

3-99 (40 pages) "MiG-17F/LIM-6: SMER Spritzguss 1:48" 2 page review of the Smer 1/48-scale kit including 2 photos of model in Indonesian colors.

ITALY

AERO FAN Storia di Italiane. (Giorgio Apostolo Editore, Via Ampere 49, 20131 Milano, Italy.) Side-

by-side Italian-English text. 4 issues L 80,000.

#65 Apr.-Giu. 1998 (68 pages) "Italian Historical Aircraft at Pratica di Mare" 7 pages with 11 color photos. "The Alfa Santoni-Franchini Biplane of 1919" 8 pages including 7 photos and scale 3-view drawing. "Piaggio-Casiraghi Designs: From P 101 to P 133 (1936-1943)" (Part 1) 11 pages including 6 photos and 10 general-arrangement drawings. "Report about Societa Italiana Transadriatica Venice, 1st January 1930" 12 pages including 7 photos. "Early Days in North Africa" 10 pages including 5 photos and one color side-view drawings of Bertolaso's MC.202. "An Unusual Sparviero: The twin-finned SIAI S.79" 6 pages including 5 photos and 2 color side-view drawings.

#66 Lug.-Sett. 1998 (68 pages) "Breda-Pensuti: A family of ultralight triplanes" 11 pages including 15 photos and 8 side-view drawings. "A Special Folgore" 4 pages including 4 photos and a color side-view drawing of Macchi C.202/DB601E. "Argentine Pilots, British Ships and MB339s" 19 pages including 10 photos, map, tables, and 4 color side-view drawings. "The Cantoni-Cremona C.C.5 Amphibian" 4 pages including 2 photos. "April 1945: Last Days of 1st Gruppo Caccia on ANR" (part 1) 9 pages including 14 photos. "Giorgio Solaroli" 5 pages including 6 photos, table of victories, and color side-view drawing of his MC.202. #67 Ott.-Dic. 1998 (68 pages) "The Lohner Flying Boats made by Nieuport-Macchi" 10 pages including 8 photos. "Caproni and Reindeers: Aircraft Sales Promotion in Sweden in 1940-43" 18 pages including 13 photos and 4 "what-if" color side-view drawings (Ca.331, SAI 207, Re 2001, & Re 2005). "Escape from Rhodes: The story of the Cant. Z.506 MM 45467" 9 pages including 10 photos. "The DC-7 in Italian airlines" 13 pages including 10 photos and table. "April 1945: Last Days of 1st Gruppo Caccia of ANR" (part 2) 8 pages with 18 photos and tables.

JP-4 (JP-4, CP 1550, 50100 Firenze; L 27.000 Europe, L 30.000 elsewhere).

#4 Aprile 1999 (100 pages) Color photo: Kuwait Hawk Mk.64. "Una ricerca difficile" 6 pages including 11 photos on search for the story and remains of a German fighter shot down on 16 March 1944.

#5 Maggio 1999 (100 pages) Color photos: South Korean F-16C '92001'; Dutch Lynx; Turkish F-4E '72-10125'; and Suriname CASA C-212/400. "La NATO all'attacco" 6 pages including 12 photos. "Distaccamento Icaro" 6 pages on Spanish AF over Serbia including 12 photos (F-18 & C-130). "La PAN spara" 6 pages on armed MB.339A/PAN including 13 photos. "Spartan 'Due'" 6 pages on the G.222 including 19 photos (Thailand, Dubai, Libya, Venezuela, Argentina, & Somalia).

#6 Giugno 1999 (100 pages) "I Sukhoi degli Hunting Hawks" 4 pages on Indian Su-30 including 7 photos. "Le Aoule Albania" 6 pages including 13 photos (MiG-15, -17, & -19; Il-14 & -28; Mi-4; and An-2). "9a Brigata Aerea" 6 pages including 17 photos.

#7 Luglio 1999 (100 pages) Color photos: Egypt-

tian F-16 and Polish An-26. "Aviazione di Marina Brasiliana" 4 pages including 12 photos (Tiger Moth, Skyhawk, Super Puma, Super Lynx, & Bell 206). "Un Museo in Bangladesh" one page including 4 photos (A-5 Fantan, DHC Otter, FT-2, & F-86).

NETHERLANDS

MODELBOUW IN PLASTIC (IPMS-Nederland, PO Box 40082, NL-8016 DB Zwolle). Now with English captions and summary.

2/99 (44 pages) Nothing of small-air-force interest. (crashed B-17 diorama, 6 pages including 19 photos. 1/48 Martin Baltimore and Maryland, 3 pages including 4 photos. photographing model a/c, 4 pages including 17 photos. 1/72 Sikorsky S-43, one page with 3 photos of aircraft.)

USA

WWI AERO (15 Crescent Rd., Poughkeepsie, NY 12601; 4 issues \$30.00 USA or \$30 overseas).

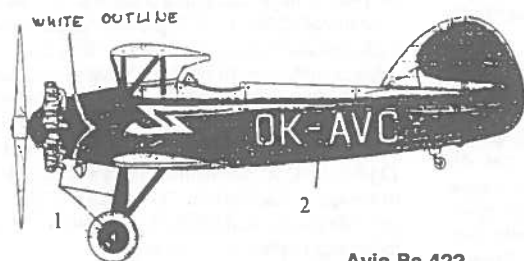
#165 Aug 1999 (148 pages) "Resurrecting the Wright Kite" 8 pages including 6 photos and a 2-page scale drawing. "Russian Curtisses" (Part II) 17 pages including 22 photos. "Learning to Fly with the RNAs in WWI" 4 pages. "Nieuport 28" 19 pages including 12 photos and 3-view drawing. "Ross Walron's New DR-1" 4 pages including 8 photos. "Drawings" 6 3-view drawings (Fokker 1916 Monoplane, AEG biplan biplace, Albatros 1915 & C.III, Aviatik 1916, and LVG 1916). "Pilot Reports: 1911 Cessna Silverwings" 6 pages including 6 photos. "William Samuel Henson" 2 pages. "Photos" 15 photos of crashed Jennies and DH-4s.

SKYWAYS (15 Crescent Rd., Poughkeepsie, NY 12601; 4 issues \$30.00 USA or \$30.00 overseas).

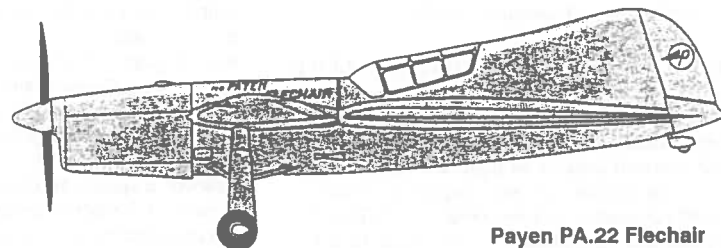
#51 Jul. 1999 (84 pages) "Osa and Martin Johnson's Famous Sikorsky Flying Boats: (part 4) 14 pages including 17 photos. "More on the Stinson R" 4 pages including 6 photos. "Identification Unknown" 5 pages on a/c identified and unknown including 10 photos. "Early Curtiss Hawks: L 18-1 (XPW-8), P-1A, -1B, -1C; F6C-1, -2, -3" 31 pages including 46 photos and 10 pages of detailed scale drawings. "Models" 4 pages including 8 photos. "From the Members" 2 pages including 2 photos.

ESM 72 (Model-Aire International, PO Box 159, Olema, CA 94950. Quarterly. \$24.00 per volume. \$30.00 outside the USA.)

Vol 3, No 3, Summer 1998 (52 pages) "Aircraft D-F" 28 pages listing all kits from Daimler-Benz to Fuji. "Aircraft Updates: ESM 72 Vols. 1-3" 4 pages. "Vehicles" 6 pages on Germany (contd). "Vehicle Updates: ESM Vol. 3" 1 page. "Terrain and Dioramas" 6 pages. "Rockets, Missiles & Spacecraft Updates", Vehicle Conversion Updates, Figures Updates, & Structures Updates" 2 pages.



Avia Ba.422
Frantisek Novak
1/72-scale kit; RS Models
See kit reviews



Payen PA.22 Flechier
1/72-scale kit; MAI
See kit reviews

Aerei" and "Aerei Modellismo" 1997-1999 Roundup

This is the usual annual round-up of the Small Air Forces items appeared in the Italian magazines "Aerei" and "Aerei Modellismo" in the period August 1997 - May 1999. Those interested in obtaining back issues or subscription can contact the publisher: Delta Editrice, C.P. 409, Borgo Regale 21, 43100 Parma, ITALY. From August 1998 on, Delta started a new bi-monthly magazine, dealing with historical aircraft only, named "Aerei nella storia" (Aircraft in history); here you will find also a round-up of the Small Air Forces items for this new magazine. These are the current subscription rates: Aerei 100.000 lire; Aerei Modellismo 85.000 lire. The cost of a back issue is as follows: Aerei 12.000 lire (issues available from June 1998 onward); Aerei Modellismo 12.000 lire (issues available from June 1998 onward); Aerei nella Storia 15.000 lire (every issue is available)

Aerei

- **August '97:** Color photos: Italian H-500 helicopter in special markings; Romanian MiG-21 (Lancer update); an article on Canary Islands Aerial Command with 9 color photos of Spanish aircraft (Mirage F-1, C.212, Fokker F.27); an article on two Italian Aerobatic teams of the fifties: "Tigri Bianche" and "Cavallino Rampante" with 6 b&w photos and two color drawings of their F-84G and Canadair Sabre.

- **September '97:** Color photos: Thai AV-8A; Polish Mil-24; two b&w photos of a Bulgarian MiG-17 crashed in Southern Italy in 1962; an article on the Flying fish exercise with 9 color photos, comprising Malaysian MiG-29M, F-5E, Hawk, New Zealand A-4KU and Singapore two-seat A-4S; an article on the AMX, with 5 color photos and a cutaway drawing; an article on the J-7 Chinese fighter, with 6 color photos and a giant centrespread drawing in Pakistani livery; an article on the "Diavoli Rossi" Italian Aerobatic team of the fifties with 6 b&w photos and two color drawings of their F-84F.

- **October '97:** Color photos: Turk F-4; Austrian Draken; Spanish Mirage F-1; an article on Thai AV-8A; with 8 color photos of Thai and Spanish a/c; an article on the Iles d'or '97 exercise, with 8 color photos mainly of Italian Navy AV-8B; an article on the Swiss Sion air show, with 6 color photos (Swiss F-18, Czech MiG-21U); a history of the Mirage III in Argentina with 9 color photos and a drawing; an article on the "Lanceri Neri" Italian Aerobatic team of 1958, with 4 b&w photos and a color drawing of one of their F-86; an article on Operation Alba, with 4 color photos of Italian a/c (G-222, F-104, Tornado, AMX).

- **November '97:** Color photos: Saab Gripen; Eritrean MB.339CE; Indian Su.30MK; Czech MiG-21U; an article on the French Navy Super Etendard with 6 color photos (one representing a Crusader); an article on the 1947 and 1965 Indo-Pakistani wars, with 10 b&w photos (Indian Tempest Mk.II, MiG-21F, Mystere IV, B-24J, Hunter, Gnat and Pakistani F-86, F-104) and a color drawing (Pakistani F-104).

- **December '97:** Color photos: Qatari Mirage 2000-5 and Mirage F-1; Italian AMX; an article on the Swiss Aerobatic Team, with 7 color photos of Hunter and F-5 in their special livery.

- **January '98:** Color photos: Moldavian MiG-29; an article on Australian F-18, with 6 color photos; from this issue, Aerei includes a section about space technologies.

- **February '98:** Color photos: Italian SH-3D; an article on the Dynamic Mix '97 exercise, with 10

color photos (Italian AMX, British Tornados, Greek F-5, Danish F-16); an article on the 720 Stormo of the Italian Air Force, with 6 color photos of its Breda-built Hughes 500.

- **March '98:** An article on the 75th year of the Italian Air Force, with 18 color photos of all the aircraft and aircraft weapons now serving with the A.M.I.; an article on Croatian MiG-21, with 8 color photos (one of them of a PC-9); An article on the Fiat G.55 WWII fighter and its post WWII derivative, the G.59.

- **April '98:** Color photos: Israeli F-15I; Malaysian F-18D; Swiss Mirage IIIRS; Japanese T-33; Taiwanese C-119; an article on Australian MB.326 with 7 color photos; an article tracing the history of Italian fighter aircraft after WWII with 22 photos of fighters in Italian markings (P-47, P-51, P-38, Vampire, Spitfire, F-84, F-86, F-104, Tornado, EF-2000 and the indigenous Fiat G-80/82 trainer and Aerfer Sagittario fighter); an article on Italian F-104 in Desert Storm with 3 photos of recce F-104G; the giant centrespread drawing is devoted to the AMX attack aircraft, with 11 color photos of Italian and Brazilian examples.

- **May '98:** Color photos: Italian Tornado ECR; an article on the Italian Navy Air Corp, with 13 color photos (AV-8B+, AB.212, SH-3); an article on the Lithuanian Air Force, with 6 color photos (An. 2, L-39C, Mi.2, Let 410UVP); an article on the Italian Air Force, with 6 detail color photos and a cutaway drawing of the latest Italian Starfighter version, the F-104ASAM; an article on the development of Italian bomber aircraft from 1934 to 1938, with 11 b&w photos (S.79, BR.20Cant. Z1011, Cant. Z1007), a cutaway (Caproni 135) and two color 3-views (Caproni 135 and Piaggio P.32).

- **June '98:** Color photos: Israeli UH-60L; an article on the Spanish Navy Air Corp, with 8 color photos (AV-8B+, AB.212, SH-3); an article on the Italian 310 Stormo, with 5 color photos of their VIP aircraft (Falcon 50, P.180 Avanti, SH-3); an article on the Spanish Blue Legion in WWII covering the period up to the end of 1941, with 3 b&w photos and a color drawing of their Me. 109 (in German markings); an article on the T-33 in the Italian Air Force, with 8 color photos; the giant centrespread drawing is devoted to a Greek Mirage 2000EG.

- **July '98:** Color photos: Chilean IAI Phalcon AEW; Brazilian Navy Lynx; Agusta A.129; Swiss F-18 (3 photos); an article on the air show hosted by the Italian Air Force to celebrate its 75th anniversary, with 10 color photos (Belgian F-16, German MiG-29, Italian AMX, Tornado, Eurofighter, Mc.202, G-55, SM.79); an article on the Mothia 98 exercise, with 5 color photos of Italian aircraft (Tornado F.3, SH-3, AV-8B+, AB.212, F-104); an article on the Fiat CR.25 twin-engined fighter-bomber of 1936, with 10 b&w photos and a color three-views drawing; an article on the historical Italian airport of Verona, with 5 photos.

- **August '98:** Color photos: Italian AMX (2 photos); Gripen; Swiss Super Puma; Italian F-104 in special markings; Slovakian MiG-29 (color three-views drawing); an article on the latest Starfighter upgrade, the F-104ASA-M, with 9 color photos; an article on the Finnish Air Force, with 9 color photos (Hawk, F-18); an article on the historical Ghedi airport, with 5 photos (SVA, Me.109, G.55); an article on the Fiat G.50 fighter in the desert campaign, with 5 color photos of WWII operations and a color three-views drawing; an article on the Helwan Ha-300 Egyptian fighter prototype, with 4 b&w photos and a small three-views drawing.

- **September '98:** Color photos: Italian SH-3 in

special markings; Polish MiG-29, MiG-21, Mi.6; Hungarian MiG-29; Czech MiG-23, Su.22, Su.25, Mi.24, L-39; Israeli F-15, F-15 and A-4; an article on Israeli Phantoms, with 8 color photos and a color profile; an article on the 1971 Indo-Pakistani war, with 11 photos and a color profile (Indian Marut, MiG-21, Gnat and Su.7, Pakistani MiG-19, Canberra, Mirage III and F-6); an article on the historical Aviano airport, with 3 photos of Italian aircraft (Bleriot, Me.109, F-84G).

- **October '98:** Color photos: Qatar and Taiwan Mirage 2000; Belgian F-16A; PZL-130; an article on the historical Osoppo airport, with 2 photos of Italian aircraft (MC.205, Me.109G); a short article on the Red Devils Italian acrobatic team of the fifties, with 3 photos of their F-84F; a short article on Italian SAR, with 3 photos of HH-3F helicopters.

- **November '98:** Color photos: Greek Mirage F-1; Gripen and Rafale prototypes; New Zealand A-4K; an article on the Cooperative Chance '98 exercise, with 11 color photos (Swedish Viggen, German and Polish MiG-29, Bulgarian, Romanian and Czech MiG-21, Slovak Mil-8 and Ukrainian An.30); an article on Argentine Super Etendards in the Falkland war, with 6 color photos, a color profile and a cutaway; an article on the Tiger Meet 98 with 5 color photos of suitably striped aircraft (Norwegian F-5A, German and Italian Tornado, French Mirage 2000 and Super Etendard); the giant centrespread drawing is devoted to a Singapore A-4SU.

- **December '98:** Color photos: Finnish MiG-21; Italian SH-3; A photo and a color profile of a British B-29; color profile of an Italian recce Beech C-45; the giant centrespread drawing is devoted to the Saab J-39 Gripen.

- **January '99:** Color photos: AJS-37 Viggen; Libyan Tu-22 Blinder; an article on Norwegian F-16 operations, with 10 color photos; an article on the first woman jet pilot in Swiss Air Forces, with 4 color photos of Swiss Hawks and more, of course, of the lady; an article on Rumanian upgrades, with 7 color photos of the Mig-21 Lancer and the IAR-99 Soim.

- **February '99:** Color photos: MIG 1.44 prototype; Lithuanian Yak-52; Italian F-104S/ASAM; Turk F-16C; an article on the Italian Air Forces 320 Stormo, with 14 color photos of their AMX's; a short article on the restoration of a S.79 WWII Italian bomber with 4 color photos.

- **March '99:** Color photos: Belgian F-16; Maltese Islander; Italian Tornado.

- **April '99:** Color photos: Polish MiG-21; Danish F-16; Chilean P-3; New Zealand A-4K; Egyptian Seasprite; an article on the Portuguese Air Force with 9 color photos (Alpha Jet, A-7, P-3, O_2, T-38, F-16, Epsilon) and an order of battle; an article on the inter-war great Atlantic crossings with color drawings and 18 photos (SIAI S.55, SIAI S.16, Vimy, Wal, Douglas World Cruiser, Spirit of St. Louis, Winnie Mae, DH Comet).

- **May '99:** Color photos: Italian Tornado and F-104; Turkish updated F-4; Polish Su.22; an article on the 1999 Aero India air show, with 8 photos of Indian aircraft (HAL Kiran, Jaguar, Ka.28, Tu.142, MiG-23BN, Do.228 and a Rumanian upgraded MiG-21UM); an article on the 21st Gruppo of the Italian Air Force with 6 photos of their Tornado F.3; an article on the Harrier II with a color drawing and 4 photos of Italian examples; 4 photos representing the new ECM systems fitted to Italian C-130; an article on the Italian SH-3 Sea King with 7 photos and a giant centrespread drawing.

Aerei Modellismo

- **August '97:** An article on building a Reggiane 2003 recce-fighter from the 1/72 kit by Supermodel and a Reggiane 2000 fighter from the 1/50 SMER kit with 5 b&w photos, a giant color drawing and color references; an article on the new 1/72 kit of the Macchi MC.200 Saetta by RCR, with 3 color photos; 4 color photos of a French AD-4 Skyraider.

- **September '97:** An article on building an Italian Boeing 707/T tanker from the 1/72 kit by Heller, with 2 color photos.

- **October '97:** An article on building a Romanian Arado 196 seaplane from the 1/48 MPM kit, with color drawings (one for a Bulgarian a/c); an article on building a Reggiane 2001 fighter from the 1/48 resin kit by E.P. Original Models, with 3 b&w photos and color references.

- **November '97:** An article on building an Israeli Mirage IIICJ from the old 1/48 Heller kit, with a giant color drawing (one for a Bulgarian a/c), 2 color photos and color references; an article on building a Reggiane 2002 fighter from the 1/48 resin kit by E.P. Original Models, with a b&w photo and color references.

- **December '97:** An article on building an Italian F-104 in the new all-grey livery from the 1/72 Hasegawa kit, with 6 color photos and color references.

- **January '98:** An article on building a Fiat G-59-4a fighter from the new 1/48 RCR resin kit, with 2 b&w photos of a preserved example in the Vigna di Valle Museum; an article on building a CANSA FC.20 WWII heavy fighter from the 1/72 resin kit by L.B. Italian Wing, with 2 b&w photos.

- **February '98:** An article on building an Argentine Navy A-4C from the old 1/48 ESCI kit, with a color photo and a color profile.

- **March '98:** An article on building the Hasegawa 1/48 kit of the Italian Macchi Mc. 205 fighter of WWII, with 4 color profiles (one Egyptian).

- **April '98:** An article on building the PD Models 1/48 resin kit of the Aermacchi MB. 339 trainer, with 3 color profiles and 2 color photos; a color profile of a Jordanian Hunter.

- **May '98:** An article on converting the Hasegawa 1/48 kit of the F-16C in a Greek F-16C-30; an article on building the Contrail 1/48 vacuform kit of the Martin A-30 Baltimore as an Italian Cobelligerent WWII machine, with 3 color profiles (one Italian) and 4 b&w photos of the original aircraft; an article on building a French P-39Q from the Monogram 1/48 kit, with 3 color profiles; a very rich issue.

- **June '98:** An article on building an Italian Agusta-Bell AB-47 helicopter from the 1/35 MRC kit, with 3 color photos and color references; an article on building a 1/48 MiG-15 in North Korean markings from the Tamiya kit, with 8 color photo of Polish machines and some line drawings; a small article describing a scratch-built 1/17 (!) Macchi Mc. 202 fighter.

- **July '98:** An article on building a SIAI Marchetti SM.85 dive bomber of WWII from the new 1/72 RCR resin kit, with a photo and color references.

- **August '98:** An article on building the HitKit 1/48 vacuform kit of the Su.22M in Czech markings, with 5 color photos; an article on building the 1/48 Helldiver by Promodeler in French markings, with 4 photos and color drawings for Italian, French, Thai and Greek machines; an article on building the 1/32 Revell Tornado IDS in Italian markings, with a color profile; all in all, a very rich issue.

- **September '98:** An article on building an Indian MiG-23UM from the old 1/48 ESCI kit and the Scalecast two-seat resin conversion, with 6 detail photos, a color profile and color references; an article on building a 1/72 Australian Canberra B.20, with 3 color photos, color references and 3 color profiles; an article on building the 1/72 Aermacchi MB326 by Supermodel, with 3 color photos.

- **October '98:** An article on building the Italian S.79 WWI bomber from the new 1/48 resin kit by EP Models, with 3 photos, 3 color profile and color references; an article on the Hasegawa 1/72 Draken, with 2 color profiles and 4 detail photos.

- **November '98:** An article on building a 1/48 Dewoitine 520 fighter in Italian R.S.I. markings from the Tamiya kit, with 5 detail photos and 2 color profiles; a drawing of a Cambodian Skyraider reprinted from the SAFO (with credits given, of course!).

- **December '98:** An article on building a Cant. Z.506 seaplane from the old 1/72 kit by Supermodel, with 10 detail photos.

- **January '99:** An article on building the 1/48 Macchi 200 fighter from the Italian Classic resin kit, with 13 very nice photos and a color profile.

- **February '99:** An article on building an Alenia G-222 in 1/72 scale from the Sky Models resin kit, with 12 color photos and a color 3-views; a color profile of an Israeli Meteor Mk.8.

- **March '99:** An article on building the 1/48 Fiat CR.32 by Classic Airframes, with 9 detail photos, a colour profile, a small 3-views and color references for an Italian early camouflaged machine; a wonderful article covering special markings in Italian Air Force, with 22 color photos of F-104, G-91, AMX, SH-3 and G-222 all in very colorful special liveries; an article about building an Hungarian FW.189 from the 1/48 MPM kit, with 3 photos, detail sketches and color references; color profiles for 2 Italian Do.217J WWII night fighters; a very rich issue.

- **April '99:** An article on Italian WWII camouflage, with 11 photos and color references; an article on a scratch built A.129 Mangusta attack helicopter, with 10 color photos of the real aircraft.

- **May '99:** An article on building the 1/48 Fiat CR.42 by Classic Airframes and the resin detail set by Italian Classics, with 18 detail photos and color references; an article on building a Qatari Hunter FGA.78 from the 1/48 Academy kit, with 10 detail photos and a small 3-views; a color photo of an Italian Tornado during the 1991 Gulf war, with color references.

Aerei nella storia

- **August '98:** Photos: Re. 2001 Italian WWII fighter; an article on the Fiat G.46 trainer of 1948, with 11 photos of Italian and Argentine aircraft; a small article of the colors used on the Fiat G.55 fighter of WWII, with 3 photos and a color profile.

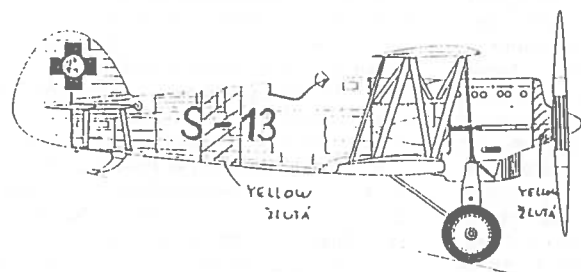
- **October '98:** Photos: Italian C-119 ECM conversion; CR.42 fighter; Chinese Il.10 and AEW Tu.4; B-45 Tornado in RAF markings; an article on attack aircraft of the Italian Air Force from 1933 to 1940, with 14 photos, a 3-view and a cutaway drawing (Ba. 65, Caproni AP.1, Fiat G.50, Aeronautica Umbra UT.18, Caproni Ca.335).

- **December '98:** an article of the Fiat G.55 fighter of WWII, with 11 photos, 3-views and cutaway drawings; an article on the WWII bombing missions against Gibraltar by Italian Air Force, with 11 photos and color profiles of the aircraft used (SM.82, P.108, SM.79); an article on Croatian Air Force in WWII, with 5 photos and 3 color profiles (Me. 109, G.50, Blenheim, Do.17Z, Ca.310, Fokker IX).

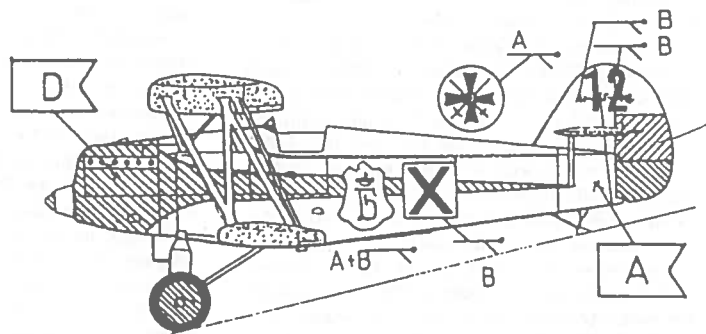
- **February '99:** an article of the Reggiane 2001 fighter of WWII, with 12 photos, 3 color profiles, a small 3-views and cutaway drawings; first part of an article on the Libyan front in WWII, with 6 photos and 2 color profiles of Italian machines involved (CR.42, Storch, Ca. 310, MC.200); an article on the Piaggio P.132 fighter project of WWII.

- **April '99:** Color photos: Paraguayan and Italian C-47; Australian CA-27 Sabre; an article on the Fiat AS.6 special engine, installed on the Macchi MC.72 record seaplane, with 7 photos of the aircraft and 5 of the engine; second part of the article on the Libyan front in WWII, with 4 photos and 2 color profiles of Italian machines involved (Re. 2001, SM.79, MC.202); a b&w photo of a Swiss Bf.109E.

Mario Bartoli (SAFCH #719), Via R. Fucini 48, 56127 Pisa, Italy.



Avia B.34
Slovak Air Force
1/72-scale kit; RS Models
See kit reviews



Arado Ar 65
Bulgarian Air Force
1/72-scale kit; RS Models
See kit reviews

THE COMMONWEALTH WIRRAWAY

Colin Owers

On 26 December 1942, Flying Officer J.S. Archer and his observer, Sgt. J.L. Coulston, were flying a tactical-reconnaissance mission over the north coast of New Guinea. Their aircraft was an obsolete Commonwealth Wirraway, serial number A20-103, aircraft 'D' of No. 4 Squadron RAAF. Near the village of Gona, Archer sighted a "Zero" fighter below him. Since the Japanese pilot seemed to be unaware of the presence of the Wirraway, Archer put his aircraft into a dive and gave the unsuspecting enemy a burst of fire from his twin machine guns. The bullets apparently struck a vital place, for the "Zero" immediately plunged into the sea. Archer achieved what had been thought impossible; the destruction of a heretofore invincible Japanese fighter aircraft by an obsolete Wirraway. For this feat, Archer was awarded the American Silver Star.

Establishing an Industry

The story of the Wirraway begins in 1934 with the arrival in Australia of the KLM Douglas DC2 which was participating in the MacRobertson London-to-Melbourne Air Race. In response to the sensation caused in Australia by this outstanding performance of this modern aircraft, Sir Lawrence Hartnett, the General Manager of General Motors Holden, was approached with the idea of having Holden manufacture the DC-2 in Australia. However, by this time General Motors USA, had terminated its partnership with Douglas Aircraft and was no longer interested in aircraft construction.

The Australian Minister of Defence, Sir Archdale Parkhill, then asked Hartnett how he would go about establishing an aircraft industry in Australia. At Hartnett's suggestion, six of the top men from Australia's biggest companies were invited to a conference to discuss the formation of an Australian aircraft industry. These patriotic Australians reasoned that a war with Japan was inevitable and that Australia would not be able to rely on European or American supplies of aircraft. As a result of these informal discussions, £60,000 was put up to establish an Australian aircraft industry. Thus was born the Commonwealth Aircraft Corporation (CAC).

Finding an Aircraft to Build

Lawrence J. Wackett, an ex-Wing Commander, RAAF, who had been designing and building aircraft in Australia since the end of the Great War, was considered the best possible choice to run the new company. There was only one problem; Wackett had a job running Tugan Aircraft in Sydney. But, Hartnett secured his release from Tugan by the simple expedient of buying the company!

Wackett's first assignment for the newly formed CAC was to be a world trip to choose the best aircraft for licence construction in Australia. The commission was given a free hand and told that the aircraft selected must be such that the Australian industry could be founded on the latest manufacturing methods. They were to look for a proven design utilizing raw materials found in Australia, for example steel tube rather than aluminum, and which could be produced in an emergency by semi-skilled labour. All things being equal, a British type and British practice would be favoured.

Accompanied by Sq. Leader Harrison, a technical expert, and Wing Commander Murphy, chief workshop officer of the

RAAF, Wackett left Australia in February 1936 and visited aircraft manufacturers in the United States, Italy, France, Germany, Czechoslovakia, Holland, and the United Kingdom.

The Decision to Build American

The aircraft chosen by the commission was the North American Aviation NA-16, an all-metal monoplane with stressed wing construction, steel tube fuselage, and a hydraulically operated retractable undercarriage.

When the commission returned home and announced its choice, there was a uproar in Australia. Hartnett and the Australian Government had been expecting a British aircraft to be recommended. The commission's decision was also embarrassing to Hartnett, who had only recently learned that North American Aviation was the only organization connected with aircraft construction in which General Motors retained an interest - they still owned 30% of it!

The types which London had proposed be built in Australia revealed little appreciation of Australia's needs. The first aircraft offered by the British Air Ministry was the Fairey Battle bomber powered by the technically advanced Rolls Royce Merlin engine. Wackett held out firmly for a trainer. After the decision to build the NA-16 was announced, the British put pressure on the Australian Government to change their decision. The British now strongly recommended the Westland Lysander. The Lysander was an army cooperation aircraft with a high wing and a non-retractable landing gear. The RAF had ordered the type and it was powered by a British engine. The Australian Air Board decided that the Lysander showed little improvement in construction over the Westland Wapiti which had been designed in 1929 and had been in RAAF service for some time. Therefore, the Lysander offer was refused.

The British stated that the defence cooperation between the United Kingdom and Australia was being destroyed. They claimed that if American types were manufactured in Australia, it would be impossible for Commonwealth aircraft to be an effective part of Imperial defence resources. In newspapers and parliament, questions were asked about the decision to build the American design. General Motors, in the person of Sir Lawrence Hartnett, was accused of using its influence on the board of CAC to get the American design selected.

The Choice is Defended

Wackett countered by pointing out that the NA-16 was a general-purpose aircraft, which made it easier to sell the Air Board and the Government of its value. The Imperial Conference of 1937 had stated that Australia required aircraft with ubiquity of purpose as it was a known "fact" that Japan, Australia's most dangerous potential enemy, tended to be some years behind other powers in aircraft design. Thus, the Wirraway, as the Australian-built aircraft would be called, was represented as a two-seat fighter, army cooperation and reconnaissance aircraft, light bomber, and advanced trainer. It is against this background that the decision to commit the Wirraway as a fighter over Rabaul in 1941 must be judged.

In reality, the American type had been chosen simply because a more suitable type to meet Australian requirements did not exist in the United Kingdom. North American were to

develop the NA-16 with a stressed metal monocoque fuselage into one of the most famous trainers of the Second World War and which was used in great numbers by the British as the "Harvard". No further justification of the Australian decision need be made.

Since the Wirraway could be produced more rapidly than its Wasp engines, potential CAC production of airframes was greatly in excess of RAAF requirements. Therefore, following the outbreak of war in Europe, the British Government offered to take all Wirraways produced in excess of RAAF orders. These were to be delivered to the UK by the end of 1942 and the engines were to come from stocks the British had ordered from America. However, the subsequent availability of Lend-Lease aircraft meant that the British Wirraway order was cancelled.

Design of the Wirraway

An NA-16-1A (Charge No. NA-32) with fixed spatted undercarriage and two-bladed propeller was shipped to Australia together with an NA16-2K (Charge No. NA-35) with retractable undercarriage and three-bladed propeller. The "Change Number" was an accounting number and the similarity of these to designations has led to some confusion. In Australia, the first aircraft was referred to as the NA-16 and the second as NA-33; these becoming A20-1 and A20-2 in the Australian numbering scheme.

The NA-16, as modified for Australian service, was named Wirraway - an Aboriginal word for "Challenge". The single machine gun was replaced by twin machine guns in the upper fuselage in front of the pilot and the wings and tail unit were strengthened for dive bombing.

The first true Wirraway, A20-3, was flown at the CAC Fisherman Bend field on 27 March 1939.

The Wirraway was not cheap! North American was paid US \$100,000 for the licence fee, US \$30,000 for specifications and manufacturing data, US \$1000 each for the first 25 aircraft, and US \$600 for the next 75 aircraft; whereupon payments would cease.

In 1942, as the result of the success at dive bombing by Wirraway aircraft fitted in Malaya with improvised dive-bombing flaps, the RAAF asked that a large number of the aircraft be converted in this manner. The technique for this purpose was established by CAC which converted the first 40 aircraft. The balance of the conversion programme was undertaken by civilian servicing contractors, the programme being terminated at 113 aircraft delivered by 30 October 1943, by which time supplies of operational aircraft available from the USA made it unnecessary to continue with improvised machines.

The Wirraway goes to War

When war broke out in Europe, only seven Wirraways were in RAAF service. The adoption of the Empire Air Training Scheme led to further orders for the Wirraway being placed with CAC. A production rate of 6 Wirraway per week was the immediate target.

In addition to its training tasks and home defence duties, Wirraways were also used to strengthen Britain's Pacific and Far East defences against a possible Japanese attack. Hudsons, Buffaloes, and Wirraways were sent to Singapore and Malaya. Seven Wirraways were assigned to No. 21 General Purpose Squadron in Singapore until they were replaced by Brewster Buffaloes. The Wirraways were then issued to a training unit for

newly arrived aircrew. This unit was unusual in that the pilots were New Zealanders and the observers Australians. When the Japanese invaded Malaya, the Wirraways were pressed into action, performing dive bombing and strafing attacks. On 19 January 1942, the Wirraways, together with four Dutch Martin bombers and eight Buffaloes, attacked enemy positions on the Muar River. All the Martins, one Wirraway, and a Buffalo were shot down by the defending fighters. The remaining aircraft played little part in the defence of Malaya.

Tragedy over Rabaul

Since Rabaul not only was a strategic point in the lines of communication to Australia but it also provided an excellent base from which an enemy could carry out air operations against the north-east coast of Australia, the Australian Government insisted in making a stand there. Late in 1941, No. 24 Squadron's Wirraways were transferred to Vunakanau airfield at Rabaul, but there had been little preparation for their arrival. There was no provision to disperse the aircraft which had to be parked in a line along the perimeter of the airstrip; the most vulnerable position if the enemy attacked. In addition, there were no facilities for photographic, or armament sections, and the workshop was a galvanized-iron shelter. In spite of these difficulties, the Squadron was soon carrying out patrols.

Between 4 and 8 January 1942, the Japanese made four small raids on Rabaul township and the RAAF aerodromes; evidently to test the strength of the defences. It was obvious that a major attack could be expected and that the forces there were hopelessly inadequate for the defence of the island.

An atmosphere of extreme tension developed. The RAAF was consistently on the alert: all serviceable aircraft had their engines warmed up before dawn each day, aircrew were kept ready from dawn to dusk, and all ranks were constantly at their posts waiting for the fight which they knew would soon commence. Wirraways began making regular reconnaissances to seaward to keep a look-out for enemy shipping.

On 20 January, the Japanese launched their first full-scale air attack on Rabaul. Shortly before one o'clock in the afternoon, nearly 100 enemy bombers with a large fighter escort came over. The raid took the form of pattern bombing; the main targets being the wharf, gunposts, shipping, civil and military installations, and the aerodromes. Only eight Wirraways were available to opposed this huge enemy force.

Two Wirraways on standing patrol were shot down in a matter of minutes. The pilot and observer of one, Pilot Officer J.C. Lowe and Sergeant Ashford, were killed instantly when their blazing aircraft crashed into the sea. Sergeant C.R. Herring and Pilot Officer A.G. Claire, in the other machine, were wounded when they crash-landed their burning aircraft on Lakunai airstrip.

Five more Wirraways took off to engage the enemy, but they were still thousands of feet below the bombers when the first bombs began to burst. An eighth Wirraway, piloted by Flight Lieutenant Bruce Anderson with Sergeant Col. Butterworth as observer, was taking off when its engine cut at about 50 feet and the aircraft crashed in heavy kunai grass about a mile from the airstrip. Both men were badly injured and their aircraft was a complete write-off.

Fighting in pairs, the remaining Wirraways climbed up to attack the bombers, but were immediately engaged by a whole squadron of Zeros. Sergeant W.O.K. Hewitt with Flying Officer

John Tyrell as observer, climbed to 10,000 feet and prepared to attack a formation of nine Kawanishi Type-97 "Mavis" flying boats. At that moment, they were engaged by a Zero. The Wirraway was badly shot up and Hewitt wounded. He blacked out temporarily and the aircraft went into a spin. Tyrell, who was standing up at the rear gun fell out and plummeted to earth. He could not reach his parachute rip-cord, but it luckily opened by itself. He floated into the branches of a tree 14 miles from the aerodrome. Meanwhile, Hewitt came to at 400 feet and pulled out of the spin. Still pursued by a Zero, he managed to make a crash-landing at Vunakanau airstrip.

Attempting to go straight up underneath the enemy and attack from below, Sergeant C.R. Bromley was shot through the head and killed instantly. Badly damaged and out of control, his aircraft crashed off Praed Point killing his observer, Sergeant R. Walsh.

Little is known of the fate of Sergeant R.A. Blackman and S.E. Woodcroft, except that their Wirraway was last seen engaged in combat with a number of Zeros. Nothing was ever heard of either the aircraft or its occupants; they too must have been shot down and killed.

Two other Wirraway pilots, Sergeant Milne (with Sergeant R. Harber as observer) and Sergeant Little (with Sergeant Shepperd as observer), were more cautious. Realizing how hopelessly outnumbered they were, they hid in the clouds and made repeated passes at the enemy; returning to the clouds each time. In the process, their aircraft were badly shot up, but neither they nor their observers were wounded and they managed to land safely at the end of the battle.

In the period of about seven minutes, three Wirraways were shot down, two others were forced to crash land and another was badly damaged when its engine failed on take-off! Six Australians had been killed and a further six injured or wounded. The air defence of Rabaul now consisted of two Wirraways and one Hudson.

The Wirraways were ordered to evacuate flying personnel and the Hudson to take out the wounded. The evacuation of Rabaul had begun. On the 23rd, the Japanese landed virtually unopposed.

The Wirraway finds its Element

The Japanese advances saw Australia attacked for the first time in its history when Darwin was raided on 19 February. For the next 5 months, the Wirraways of No. 12 Squadron were the only aircraft available for the defence of Australia's northern gateway. Fortunately, more modern aircraft became available and in July, No. 12 was withdrawn. Although the Wirraway's career as a fighter was now ended, its combat role was to continue.

On 7 November 1942, No. 4 Army Cooperation Squadron was established at Berry airfield, New Guinea, with 18 Wirraways. The Wirraway now began to find its element. The task of the Wirraways was primarily tactical reconnaissance, but the aircraft soon proved its versatility in a variety of tasks including marking targets with smoke bombs and dropping supplies to ground troops. In late 1943, No. 4 Squadron began to receive Boomerrang single-seat fighters, but these never actually replaced the Wirraways.

No. 5 Tactical reconnaissance Squadron served on Bougainville Island in the Solomon Islands, its Wirraways and Boomerangs marking targets for RNZAF Corsairs. (This was

the first time that the Australian Army, RAAF, RNZAF had worked together since the days in 1941 during the futile defence of Greece.) In the rugged terrain of the Pacific it was essential for the pilots to learn to fly more or less automatically at low level while pin-pointing enemy positions with the utmost accuracy. One slip and the aircraft and crew would be "written off". One typical operation was that carried out on 16 January 1945, when Flying Officers W. Pascoe and R. Hunt led a flight of New Zealand Corsairs against huts which had been reported as being used by the Japanese. The huts were destroyed by depth charges dropped by the Corsairs.

Towards the end of the Bougainville campaign, there was less call on No. 5 Squadron as the New Zealand pilots became more proficient in their map reading and training and Austers were introduced for contact reconnaissance duties.

Wirraways of No. 4 Squadron were used to supply the troops engaged in the fierce fighting around Mubo in New Guinea. The village is surrounded by hills and ridges, possession of which meant possession of Mubo and the control of the track which went to Komiatum and Salamaua. Because the area is covered with thick jungle, the infantry had to guide the RAAF bombers into the attack by firing smoke shells from mountain gun. The Wirraways flew in ammunition, and conducted artillery-spotting, photo-reconnaissance, and message-dropping missions.

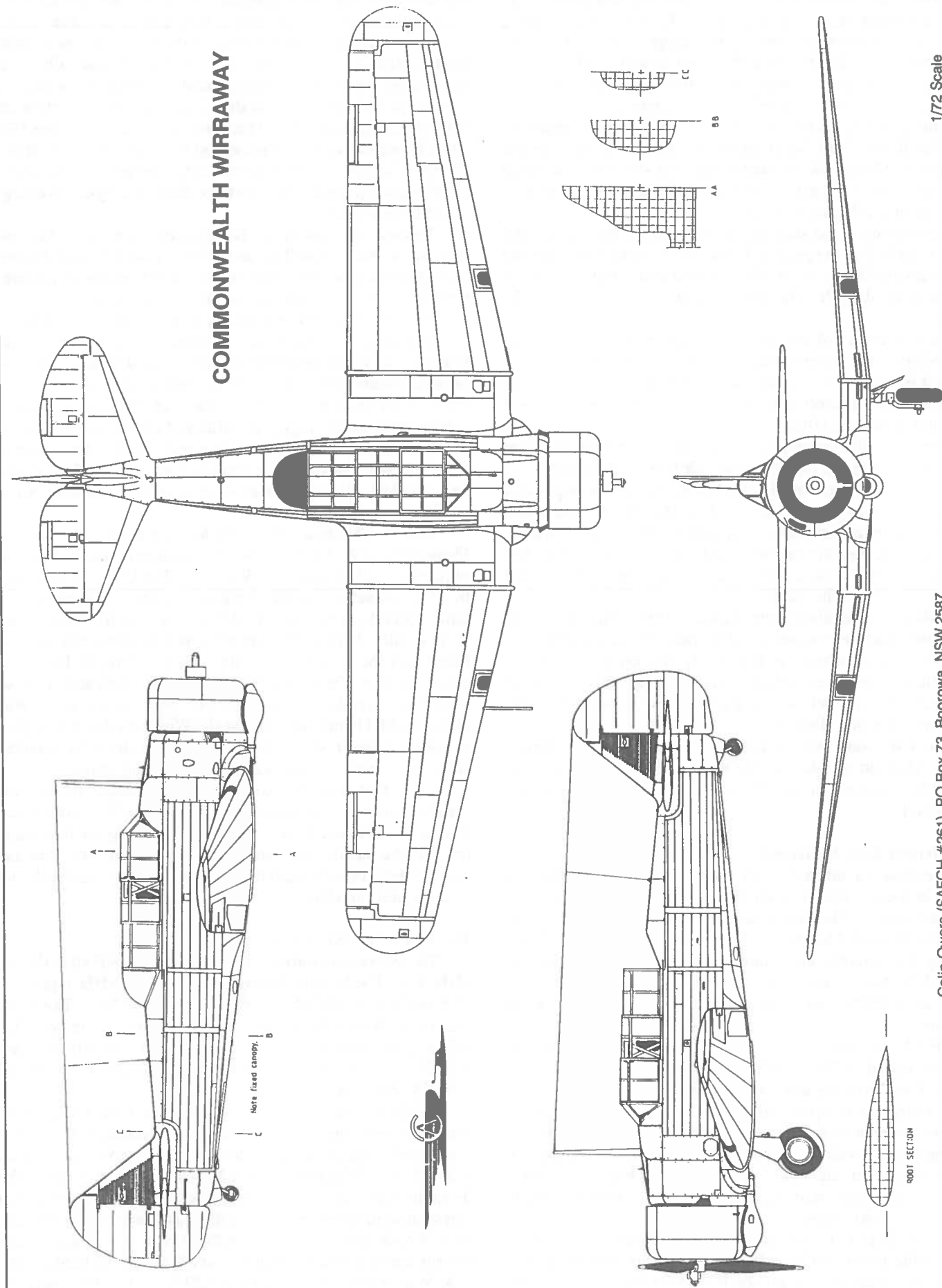
During Christmas 1944, Flight Lieutenant G. Gory and Flying Officer W. Tucker of No. 5 Squadron originated the idea of playing Santa Claus in a Wirraway. The idea was embraced by all personnel and pudding, cigarettes, books, etc., were made into packets to be dropped to Allied patrols in the Kieta area of Bougainville. Taking off from Piva on Christmas day, the pair found that the clouds forced them to fly within 20 feet of the mountain tops. The engine of their aircraft failed and Gory was forced to come down in some of the most inhospitable terrain in the world. He managed to put the Wirraway down on a piece of flat land about 60 feet by 30 feet on the side of a mountain ridge, both men escaping with minor cuts and bruises.

Later that day, they were found by friendly natives who cared for them and led them through Japanese lines to their unit. Tucker entertained their rescuers by removing his false teeth, the first the natives had ever seen! The pair arrived back safe after 14 days; bearded and tired, but full of spirit and with their wounds well cared for.

The Last of the Wirraways

The Wirraway continued to serve the RAAF after the end of the War. The last unit known to have operated the type is No. 23 Squadron at Mallala, South Australia, in 1959. The Royal Australian Navy's Fleet Air Arm also operated the type. The following Wirraways are known to have been issued to the Navy: A20-28, 133, 139, 141, 145, 168, 176, 209, 211, 214, 225, 238, 250, 469, 479, 490, and 752.

Production of the Wirraway ceased in June 1946, but the Wirraway remained in service long after production ceased. It is an ironic twist of fate that the most famous Wirraway of all, A20-103, the Wirraway in which Flying Officer Archer shot down his Zero, survived the War to become the last aircraft that had seen actual front line service during the war to be withdrawn from RAAF service. Aircraft A20-103 was still in use when it was presented to the Australian War Memorial in October 1962. (The War Memorial also had had A20-3, the first Wirraway, but



due to a misguided policy decision, this significant aircraft was sold and broken up for scrap.) At the time of this writing (November 1984), A20-103 is undergoing a full restoration at CAC's Fishermens Bend factory where it will be brought back to full Second War standard.

The Wirraway Described

The Wirraway is a two-seat single-engine low-wing monoplane general purpose military aircraft. The wings are of single-spar structure with stressed-skin metal covering, dynamically-balanced ailerons with fabric-covered aluminum-alloy frames, and split trailing-edge flaps between the ailerons and under the fuselage. The fuselage is constructed of welded chrome-molybdenum steel tubing in four sections, all bolted together. The sides of the fuselage are fabric covered on aluminum frames, the decking and the underside being metal covered. Power is provided by an Australian-made Pratt and Whitney single-row Wasp 9-cylinder 650-hp air-cooled radial engine manufactured by CAC. A three-bladed metal Hamilton Standard controllable-pitch propeller is fitted.

Specifications

Wing span	43 feet
Wing area	256 square feet
Wing loading	21.8 lb per sq ft
Normal gross weight	5575 lb
Maximum gross weight	6450 lb
Operating speeds	177 mph sea level
(2100 rpm and 28 in. manifold pressure)	199 mph 9000 ft
Landing speed	209 mph 13000 ft
Flaps down	65 mph
Flaps up	70 mph
Maximum rate of climb	1950 ft per min

The original armament consisted of two fixed 0.303 machine guns firing through the propeller arc and one rear gun mounted on a hydraulic hoist. Electrically and mechanically operated bomb slips are fitted; the normal bomb load being 500 lb (overload 1000 lb). Equipment also included a two-way wireless installation operated from either cockpit.

Wirraway Production

Each aircraft type (and sub type) built by CAC was allocated a "CA" designation, commencing at "CA-1" for the first Wirraway contract. At the time the War began, 40 CA-1 Wirraway I aircraft were on order. As explained above, the Australian-built Wirraways started with A20-3.

The second contract was for 60 CA-3 Wirraway II. Externally the most noticeable difference was the deletion of the corrugated surfaces on the Mk.I empennage, some Mk.I aircraft later being also modified to the standard surfacing.

CA-5 Wirraway II
CA-7 Wirraway II
CA-8 Wirraway II
CA-9 Wirraway II
CA-10

CA-10A

CA-16 Wirraway III

Third contract 32 aircraft
Fourth contract 100 aircraft
Fifth contract 200 aircraft
Sixth contract 188 aircraft
Believed to be a further Wirraway contract but cancelled
This contract was for an unknown number of wings to Wirraway III standard and fitted retrospectively to the earlier models then in service
Contract for 150 aircraft fitted with dive brakes.

Production ceased at the 135th example (A20757) making a total of 755 of the type built.

The Wirraway was a great aircraft. Forced by political expediency into roles which it was never intended for, it performed well against some of the most sophisticated warplanes then extant. The success of the Wirraway is due in no small measure to the gallantry of the men who flew them and is a condemnation of the policy of unpreparedness that left Australia with nothing better.

Acknowledgments

Many thanks to R. Hourigan, B. Head, and Garry Sunderland. Special thanks to the staff of the Australian War memorial especially Mark Clayton, and to "Jock" Ross of the RAAF Historical Section who provided the official camouflage drawings for the Wirraway.

Colin Owers (SAFCH #261), PO Box 73, Boorowa, NSW 2586, Australia.

Vultee Vengeance in Brazil

Rogério Terlizzi

[Editor's note: This article is reprinted from the Janerio/Fevereiro/ Marco 1999 issue of the magazine of Revista IPMS-Brasil and is reproduced here with the gracious permission of their editor, Antonio P. Linhares. Translated for SAFCH by Nancy Sharrock.] The Vengeance was designed for Vultee by a group headed by Richard Palmer in response to an order from England in July of 1940. The Vengeance was a multipurpose combat plane whose were supposed to included dive bombing. However, by 1943 it was obvious that it would be useful only in theaters where air superiority was assured. About 1528 Vengeances were built, of which, 1205 supplied to the RAF. The rest were used by the RAAF and Indian AF in areas where modern combat aircraft were hard to get.

This aircraft was also built by Northrop for the USAAF under the designation A-31. In 1942, an Americanized version was built by Convair in Nashville as the A-35. These were later converted into target tugs.

The Vultee Vengeance in Brazil

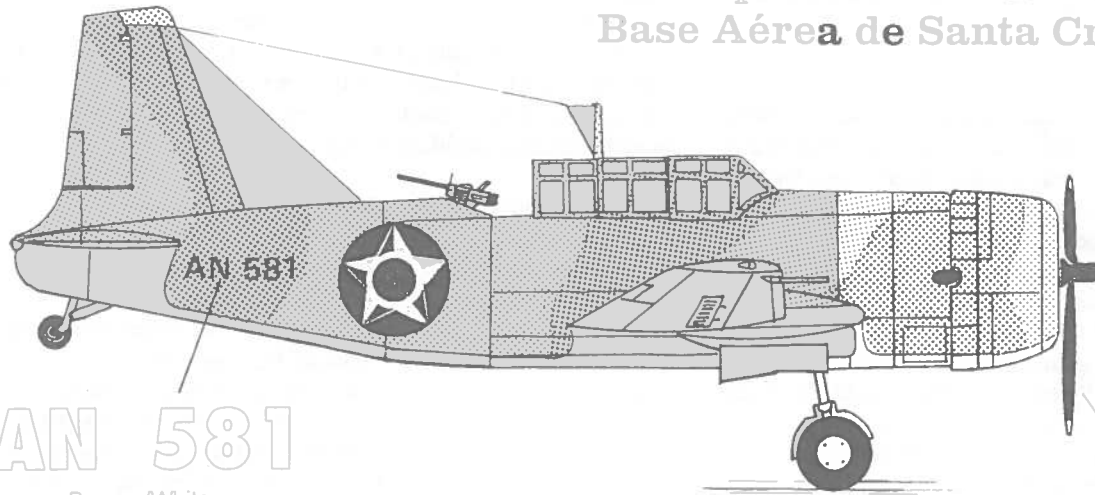
Between 1942 and 1944, the Força Aerea Brasileira (FBA - Brazilian Air Force) received 28 Vultee Vengeances Mk II/A-31 (s/n AN581 to AN608) which were transferred from an order originally placed for the RAF. Five ex-USAAF A-35B were also received.

During its tenure with the FAB, the Vengeance served with the 1st Grupo de 31 Bombardeiro Picado based at Santa Cruz in the state of Rio de Janeiro. The Vengeances the 1st Bomb Group,

along with its stablemate, the Vultee V-11GB2, actively participated in patrolling the Brazilian coast during WWII. Its activities also included training exercises with Brazilian submarines giving the pilots valuable tactical experience.

By mid-1946, the remaining Vengeances were sent to the Parque de Material Aeronautico (Aviation Materials Depot) in Sao Paulo for scrapping. Unfortunately, all that remains of the Brazilian Vengeances (beside yellowing photographs) is the engine from a Vengeance that crashed into the Baía de Sepetiba (Sepetiba Bay) during WWII and was subsequently recovered 43-years later by a team from the Museu Aeroespacial do RJ (Aerospace Museum in Rio de Janeiro).

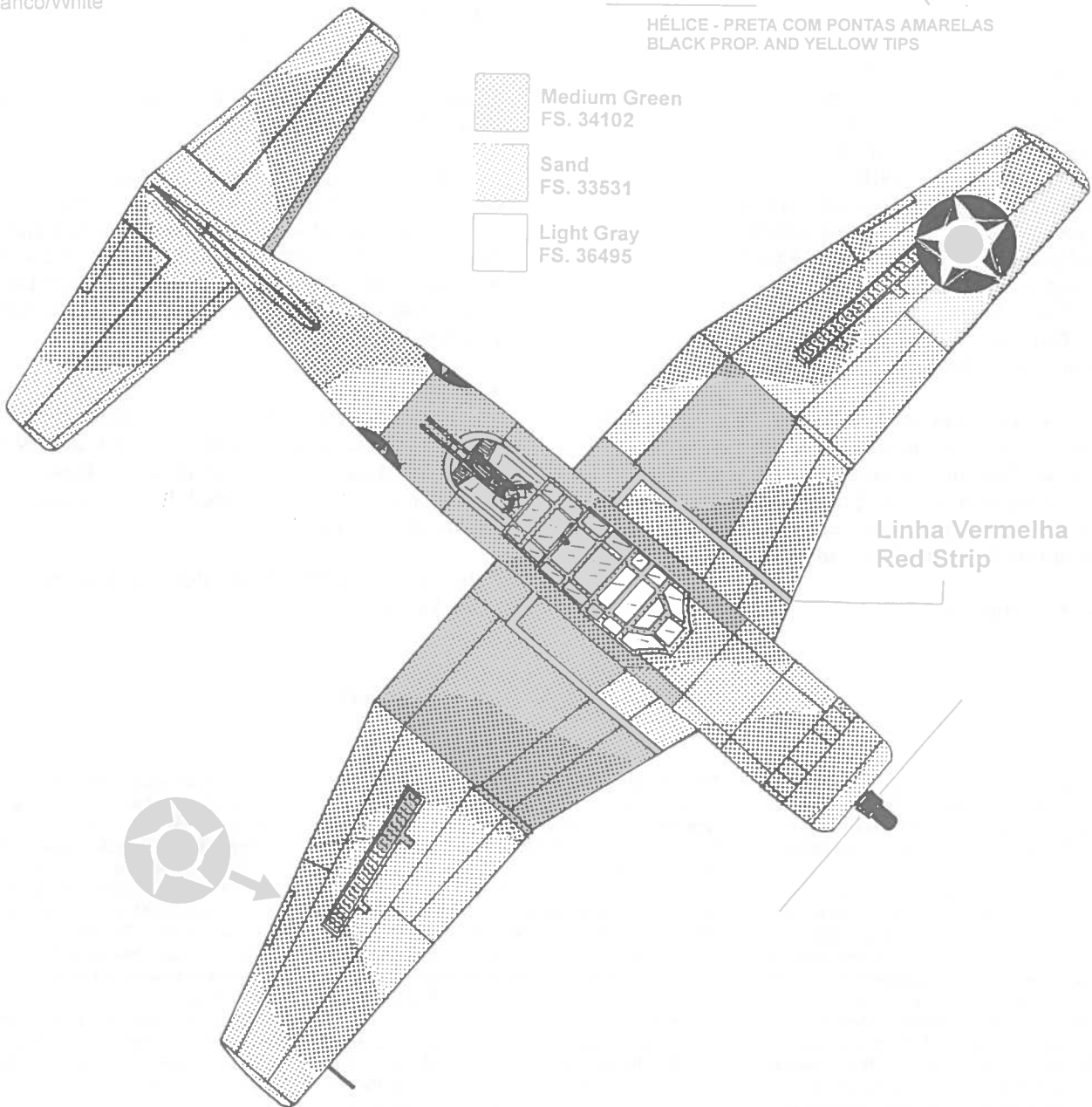
Vultee Vengeance MK II / A-31
1º Grupo de Bombardeiro Picado
Base Aérea de Santa Cruz - RJ - 1943





AN 581

Branco/White

HÉLICE - PRETA COM PONTAS AMARELAS
 BLACK PROP. AND YELLOW TIPS



-  Medium Green
FS. 34102
-  Sand
FS. 33531
-  Light Gray
FS. 36495

Linha Vermelha
 Red Strip

Drawing by **MARCOS VINICIUS**

Avia B.71 in Bulgarian Service

Josef Fregosi

The Background to the Avia B.71

The Avia Company was formed at the conclusion of the First World War by a group of Czechoslovakian gentlemen. With their main workshop being set up in the Capital City of Prague, Czechoslovakia, the group at first concentrated on the development and construction of engines, but soon began to specialize in the design, development and manufacture of aircraft. At the time, Avia was the only true company specializing in this field which was quickly realized by the Czechoslovakian government, who soon began to subsidize their work. This subsidization at the time, came in the form of Czech Crowns, but soon was to materialize in the form of orders of actual aircraft for the burgeoning Czechoslovak Air Force. The main designs that were put forth by the Avia Company were at first a mixture of single-seat monoplane and biplane aircraft. These designs were to lead to a handful of successful designs and contracts with the Czechoslovakian Government.

While Avia had made advancements in the development and production of fighter aircraft, such as the Avia B.534, the Czechoslovakian Air Force by the middle of the 1930s found itself lacking a suitable bomber type. With the clouds of war once again threatening to engulf Europe in a World War, the urgency of the need for such a bomber became even more of a reality. With no true designs being developed by either Avia or any of the other indigenous companies, the Czechoslovakian Government began to search abroad for a suitable aircraft to fill this void.

One most readily available aircraft fitting the requirements set forth by the Czechoslovakian Air Force was the three-seat Tupolev SB twin-engine light bomber. With the entering of negotiations between Czechoslovak and Soviet delegations in 1937, an agreement was quickly hammered out for the licensed production of the Tupolev SB-2M-100A in Czechoslovakia. The agreement called for the Soviets to be allowed the rights to the production of the several Skoda guns, in exchange for the rights to licensed production of the Tupolev SB-2M-100A. This contract for the production of the Tupolev SB-2M-100A was in turn handed over by the Czechoslovakian Government to the Avia Company. The terms of the agreement included the purchase of sixty-one Tupolev SB-2M-100A airframes from the Soviets, with the outfitting of them to be handled directly by Avia. All aircraft to be subsequently built after these initial 'first batch' of aircraft would be completely done by Avia. In order to cut back on production costs, Avia made a number of changes in their production of the Tupolev SB-2M-100A. These included the replacement of the two Soviet built M-100A 860 hp (632 Kw) engines, with two Avia built Hispano-Suiza 12Ydrs in-line 860hp (632 Kw) engines. In addition, the pair of twin ShKAS 7.62-mm hand-held machine guns located in the nose and dorsal positions were replaced by a single, hand-held Czech built vz.30 7.92-mm in each position. In addition to these, another single vz.30 7.92-mm machine gun was installed in the ventral position for added defensive armament. For offensive operations, the Avia B.71 as the Czechoslovak version of the type was to be known, was fitted with a bomb bay, which had the capacity for up to 600 kg (1,323 lbs) of bombs. By the time of the annexation of Bohemia and Moravia by the Germans in 1938 and the creation of Slovakia, only one Avia B.71 had been completed. On taking over

Czechoslovakia, the Germans were quick to realize the vital added importance that Czech industries could add to her war effort. As part of this harvesting of Czech industries, Avia, like many other companies, was allowed to continue their production lines, with the only difference being that the disposition of all war materials was to be decided by the Germans. This was also the result of the taking over of the financial aspects of the outstanding contracts by Germany. Eventually, some one hundred and eleven Avia B.71s were to be produced, almost all of which were directly to the coffers of the Luftwaffe.

The Avia B.71 in Bulgarian Service

In the summer of 1939, the Bulgarian Government approached Germany for the sale of aircraft to replace the aging and outdated types already in service with the Vazdushni na Negovo Velichestvo Voyski (VNVV or Royal Bulgarian Air Force). The Bulgarian delegation purchased over two hundred ex-Czechoslovak Air Force aircraft from the Germans, which included some 32 Avia B.71s. The Bulgarian delegation was attracted to the Avia B.71 for a number of reasons, including the fact that its maiden design, the Tupolev SB, had already been tested in combat in Spain, China, and Mongolia. While in some of these conflicts the Tupolev SB had put forth less than a stellar performance, the Bulgarian delegation was probably more impressed by the fact that these aircraft were being made readily available by the Germans who had no true use for them. With the poor state of the aircraft already in service, the Bulgarians were pressed for time, as the Czechs had been when they first accepted the Soviet design.

With the delivery of the Avia B.71s by the end of 1939, they were initially assigned to the 515th and 525th Yatos (Squadrons) of the 5th Bomber Polk (Division/Air Group) based at Plovdiv. The other two yatos (535th and 545th) of the 5th Polk, operated the Dornier Do 11, along with the Czechoslovakian built Aero MB.200, which was a license built copy of the French Bloch aircraft of the same designation. On entering service with the VNVV, the Avia B.71 was christened with the nickname of 'Zherav' which translates into 'Crane'. While the Avia B.71s of the 5th Polk were quickly becoming antiquated by the time they were taken into service by the VNVV, they were still the most capable bomber aircraft in service. This would be true until the introduction of the Dornier Do 17 in September of 1940. While Plovdiv was to be the main base of operations for the bombers of the 5th 'Polk, the Avia B.71s were deployed several times throughout 1940 and 1941 to Balchik on the Black Sea as part of a show of force to Bulgaria's long-term nemesis, Turkey.

In June of 1941, the Avia B.71s of the 5th Polk were to see their first combat deployment, with the basing of six aircraft, along with seven Dornier Do 17s at Badem Chiflik airfield in Eastern Thrace. The purpose of this transfer was to offer tactical support to Bulgarian Army units operating against the Greek partisans, which were becoming bolder and bolder with their attacks on the Axis occupational forces. While this was the primary reason for the transfer, the Avia B.71s and Dornier Do 17s of the detachment also acted as maritime patrol aircraft scouting the Aegean Coast for the numerous fishing vessels that were used by the Greek partisans and the British SOE, to ferry men and arms. The first true action to be experienced by the

crews of the Avia B.71s, was to come at the end of September of 1941. In a series of coordinated attacks, Greek partisans attacked Bulgarian Army outposts located at Seres and Drama, in occupied Greece. In an effort to help suppress this partisan uprising, the Avia B.71s of the detachment at Badem Chiflik airfield made several sorties in which they bombed and strafed enemy positions in support of the Bulgarian Army. By the end of October of 1941, the partisan uprising had been effectively put down.

By the end of 1943, the VNVV had become preoccupied with the defense of Sofia and other cities which were becoming routine targets for United States Army Air Force (USAAF) B-17s and B-24s operating out of Italy. With addition of P-38s, which were now making their presence felt over Yugoslavia and Greece, operations carried out by the Aegean detachment of the 5th Polk were severely curtailed. By mid-1944, the Avia B.71s based at Badem Chiflik were recalled to Plovdiv.

On September 9, 1944, with Sofia suffering under the increasing attacks from the USAAF and Royal Air Force, and the Soviets nearing their northern border, Bulgaria capitulated to the Allies after a coup was initiated. In capitulating, the newly led pro-Soviet Bulgarian Government declared war on Germany. With this declaration the Bulgarian Air Force immediately began launching strikes against Wehrmacht and Luftwaffe units stationed in Bulgaria and neighboring Macedonia. In launching these attacks, the Dornier Do 17s of the 5th Polk were immediately put into action, while the Avia B.71s remained conspicuously absent from the fighting.

This was not to last for long, as the Dorniers of the 5th Polk were quickly becoming unserviceable due to the lack of spare parts, and through losses that were being incurred. By the second week of November of 1944, some 21 Avia B.71s of the 515th and 525th Yatos were transferred from Plovdiv to Vrazhdebna Airfield in order to prepare for offensive operations, which were to be carried out against the retreating Wehrmacht. The ground crew and support staff of these yatos followed via train a short time later, which also brought ammunition and other supplies for the planned implementation of combat missions.

On the afternoon of November 18, 1944, three Avia B.71s took off from Vrazhdebna and headed for the railway station at Vuchitran, which was located just southwest of Mitrovica, Yugoslavia. Vuchitran at the time was one of the railway points being used by the mass exodus of German troops that were retreating, northward out of Greece and southern Yugoslavia. Arriving over Vuchitran at 1440 hours, the three Avia B.71s struck a German transport train that was stopped at the station, with numerous hits and secondary explosions being recorded. While anti-aircraft fire was encountered, all of the Avia B.71s returned safely to Vrazhdebna by 1530 hours.

On the following day, a patrol of Avia B.71s was put up, in order to locate and attack targets of opportunity in Macedonia. In launching this patrol, four Avia B.71s were used, each of which carried 12 x 50 kg (110 lb.) bombs. At approximately 1200 hours, the Avia B.71s located German troops and railway at Zhitarica, which was situated 4 km west of Vuchitran. Once again anti-aircraft fire was experienced as the Avia B.71 commenced their bombing runs, but all the aircraft, as with the mission from the previous day, returned safely.

On November 20, 1944, another patrol of three Avia B.71s was put up over Macedonia from Vrazhdebna Airfield. At

approximately 1230 hours, the flight of Avia B.71s located a German train north of Mitrovica. On making their attacks only one of the Avia B.71s was able to complete its bombing run. One of the Avia B.71s, white '4', which was piloted by Feldvebel (sergeant-major) Chakarov, failed to complete the bombing run due to a malfunction with the bomb bay doors. The third Avia B.71 in the flight, white '11', which was piloted by Podofitser (sergeant) Dojchev, also failed to complete their bombing run for an unknown reason. White '11', would become separated from the rest of the flight on the return trip home and make a forced landing at the village Staro Zhelezare, near Plovdiv, with its bombs still loaded on board.

The fourth and final mission of the war for the Avia B.71s occurred on November 21, 1944. On this date, four Avia B.71s took off from Vrazhdebna and once again headed for southern Yugoslavia in search of targets of opportunity. On locating a German motorized column 9 miles (15km) north of the village of Mitrovica, the four Avia B.71s attacked it with all aircraft completing their bombing runs. On the return flight back to their base, Avia B.71 white 4 (a different aircraft than the one from the previous day) made a forced landing near the village of Shtarklevci, which was once again attributed to the crew becoming disorientated and lost. Of interest is the fact that USAAF P-38s from the 15th Air Force in Italy, struck targets in this same area of Yugoslavia on November 21st. While some Bulgarian sources suggest that this was a planned joint operation, it is more likely that the attacks, if in the general area of each other, was a matter of coincidence and nothing more. After November 21st, the Avia B.71 was withdrawn from combating the retreating Wehrmacht troops. Throughout the remainder of the Second World War, the Avia B.71s were to remain on strength with the VNVV and serve as crew trainers, until their eventual replacement by the rearmament program set up by the Soviets. By the end of 1946, the Avia B.71 had been completely phased out of service and replaced by the Soviet Petlyakov Pe-2 light bomber, thus ending the career of an aircraft which had served Bulgaria so diligently during her time of need.

References

- (1) 'Aero World' Bulgaria. - no. 2/99.
- (2) Wings of Fame vol.13, Decade of Air Power: "Bulgaria 1940-1949" by Alexander Mladenov.
- (3) "Germany's First Ally: Armed Forces of the Slovak State 1939-1945" by Charles Kliment & Bretislav Nakládal, Schiffer Publishing, 1997.
- (4) "Avia B.534" by Jiri Vraný, MBI Publishing, 1994.
- (5) Personal Correspondence: Mr. Petko Mandjukov - Sofia, Bulgaria; Professor Dimitar Dimitrov - Bulgarian Air Force Academy; Mr. Dénes Bernád - Toronto, Canada

[Author's note: I would like to communicate with any one who is interested in Eastern European aviation.]

Josef Fregosi (SAFCH #1544), 546 Shoal Circle, Redwood City, CA 94065, USA. E-mail: RWC5151@aol.com

Photo Captions: (Photo on page 108)

Dénes Bernád & Stephan Bosniakov Collection

(a) Line up of seven newly arrived Avia B.71s (with one Dornier Do 17.

(b) Avia B.71 of 5th Polk.

(c) Avia B.71 under tarp and camouflage netting

(d) Avia B.71 white '2' landing on its nose.

Aircraft of the Spanish Civil War - Part 11

Kattuska Espana

With the Soviet intervention in the Spanish Civil War during the latter half of 1936, Russia became the arsenal of the Republic. From this point on, the main supply of aircraft and the training of aircrew were undertaken by the USSR.

Among the aircraft supplied were 108 Tupolev SB-2 bombers. The first arrived in the winter of 1936, and, by the end of the year, 31 were in service. Thirty-one more arrived in the spring of 1937 and a further 15 the following spring. The final deliveries were in the autumn of 1938.

The following drawings show the markings applied to these aircraft while in service of the Spanish Republic.

cadrilla in 1938. It is finished light grey overall with a black number. A red band appears on the upper and lower surfaces of the wing and around the fuselage. The rudder carries the Republican flag of red/yellow/ purple.

Fig. B: This drawings is used to illustrate two different aircraft. The first is a machine from 24 Gr. 2 Esc. in 1937. It is dark green on all upper surfaces with pale blue under sides. The number is in white and standard markings are carried. The unit of the second machine is unknown, but it is dark red brown on upper surfaces and pale blue undersides. The number is in yellow.

Fig. C: This machine is from 24 Gr. 5 Esc. in 1938. It is finished dark green on upper surfaces to which has been added mid-grey patches with pale blue

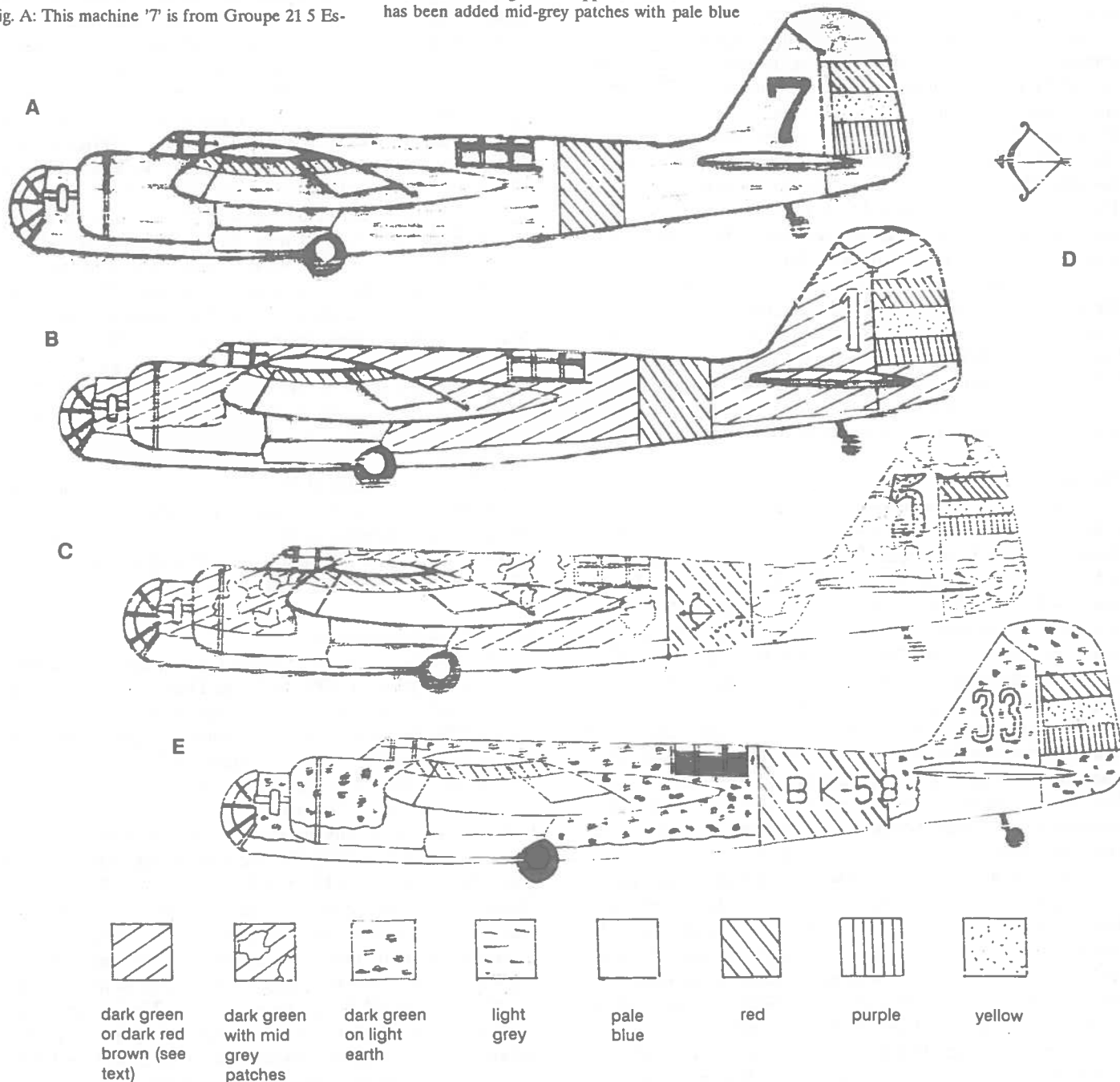
undersides. Standard markings are carried and the number '5' is yellow. A personal badge (Fig. D) is applied in white to the fuselage band.

Fig. D: Personal badge carried on aircraft '5' (Fig. C).

Fig. E: This machine is from 24 Gr. in early 1939. It is in light earth and dark green on the upper surfaces with pale blue undersides. Standard markings are carried. The number '33' is white and the 'BK-58' is black. It survived the war and entered service with the Nationalist Grupo 20W.

Bob Massey (SAFCH #364), 9 Worrall Ave., Arnold, Nottingham, NG5 7GN England.

Fig. A: This machine '7' is from Groupe 21 5 Es-



THE MORANE SAULNIER MS 760 PARIS

Eduardo E. Marber

Origins

In the ten years following World War II, the development of faster and better jet combat aircraft was among the main concerns of the major countries. Flying faster and higher were the constant aiming of designers and armed forces around the world. This evolution made evident the lack of aircraft good enough for the transition from the existing types of trainers for the formation of pilots. Pilots were obliged to pass directly from slow piston aircraft as the T-6 to some demanding jet. Even after some two-seat versions of the main types were developed, the transition remained sharp. On the other hand, the two-seater versions of first line types with their powerful motors and complex systems were costly to operate and maintain. This is the reason why, from the beginning of the fifties appeared in Europe several projects of transition/conversion and advanced trainer aircraft built around small reaction motors of low consumption and economic maintenance. In France two projects with different conceptions were presented to the Air Force. The Fouga CM 17OR Magister with two seats in tandem and the Morane-Sauinier MS 755 Fleuret (fencing foil), two-seater side by side. The first one was chosen for production, and the Fleuret prototype (F-ZWRS) remained without official support and waiting for a better chance to show itself.

The Jet Provost in England is a clear example of this concept that gave the RAF many years of good service. Other conversion trainers as the Dutch Fokker S.14 Mach Trainer and the Hispano HA-200 Saeta from Spain are slightly heavier samples. In the USA, Cessna developed the T-37 following the idea, but none of the types here mentioned offered the additional possibilities of a four seat small jet. as the Paris finally did.

The Development

Following the failure of the Fleuret, designer René Gauthier, director of the office of study of Morane Sauinier decided to modify the aircraft as a liaison type. The fuselage was redrawn, the cabin lengthened and its capacity increased to four places. The second Fleuret prototype (airframe # 2), that have remained incomplete, was so transformed and rebuilt. This prototype, baptized MS 760 01 Fleuret II made its first flight, July 29, 1954 taking off from Melun-Villaroche flown by Jean Cliquet. This short first flight of 25 minutes show the good handling conditions of the prototype which was subsequently renamed Paris on September 23 by Raymond Sauinier, chairman of the company. This same day the Secretary of State of the Air, Mr. Diodéme Catroux must attend the big NATO maneuvers in Germany and he was flown there on the brand new four place aircraft piloted by Jean Cliquet.

One month later, the Paris was presented to the German military who were then creating their new air force, but nevertheless the good performance of the new aircraft, later they choose the Fouga Magister as their first jet conversion trainer. On November 3, 1954, after 70 hours of flight, the prototype was handed to the CEV (Center of test in Flight) for tests of certification. This one was granted May 18, 1955.

In June, the aircraft was transported to the United States for a tournee of presentation organized by Beechcraft who was interested in the construction and marketing under license the type for the USA. The 1 of September, the Paris went to Canada

where it was presented in several cities of the country, both to armed forces officials and civilian prospect customers. Back in Washington two weeks later, the success was neat for this small aircraft from across the Atlantic. Both the USAF and the US Navy were looking with interest the wide and new possibilities of this French product. But the American authorities were reluctant to grant the Certificate of Navigability and some top brass pressed the Congress under the argument that it was unconceivable to arm the USA military forces with a foreign plane. Anyone remembers the similar Canberra or Harrier debate ?. Both types gave and are giving excellent service.

This failure was compensated by the first order from France military forces for 31 aircraft for the Air Force and 19 for the Aeronavale and by the purchase of 48 aircraft by Argentina. These last were to be built and assembled by the Fabrica Militar of Aviones of Cordoba. After a further presentation tour in Latin America, another country purchased the Paris, Brazil. This country acquired 30 aircraft to perform duties as liaison, training and aerial photography. Some of the Brazilian aircraft (22) were later re purchased by the Morane Saulnier company to be modified as private jets. Among the private customers, we can mention the Shah of Iran, Rehza Palevi and the Prince Moulay Hassan, son of the King Mohamed V of Morocco.

The American Certificate of Navigability was finally granted in July 1958. A new improved version was available from May 1960. The original jet engine Marboré IIC of 400 kg of thrust was replaced by the Marboré IV of 480 kg. The capacity of fuel was increased, the landing gear reinforced and a general retouch of the type was done. The performances of this new version were greatly improved, making the Paris a very useful and promising aircraft.

As France is retiring now (end of 1998) the type and the good performance and sturdiness of the Paris is well known by many aviation people, we ll see a long line of buyers for the remaining stock of this noble aircraft and it will surely keep offering good services for some years to come.

The MS760 in Argentina

The Paris prototype F-BGVO was presented in Buenos Aires on September 1957 and the Fuerza Aerea Argentina decided to buy the aircraft to be used as an armed advanced trainer. The decision was taken notwithstanding a sharp debate caused by severe budgetary restrictions at the time. The first line equipment of the FAA, the Gloster Meteor and the Avro Lincons that gave Argentina a leading position in the late forties, have been outclassed by the Hawker Hunter, F-86 and Canberas in service at neighbors. The training of Argentina pilots took place then on Hunting Percival Prentice and on FMA I.Ae.-22 (Dele Dele according to the local denomination). A portion of the force wanted more modern fighter aircraft but the economic situation dictated more reasonably to keep the operational capacity, while granting a bigger importance to the training of the flying crews till better times arrived. This smart decision proved itself the better with the reception in 1961 of the F-86F Sabres to Argentina. and posterior delivery of A-4 Skyhawks.

Finally a contract was signed to construct 48 armed MS-760A. The first batch of 12 was constructed in France, while the remaining were assembled from elements provided by Morane

between October 1958 and October 1960. The first flight in Argentina of the French aircraft took place October 27, 1958. The first batch of Paris were numbered A-01 to A-12, reflecting the light attack role that was assigned. The first aircraft, the A-01 (serial number 3) was still flying very recently with more than 10000 hours of hard work flight over its structure. The 36 other Moranes (it is by this name that it is known in Argentina) were constructed by DINFIA in its facilities at Cordoba. The first aircraft of local construction, the E-213, was delivered in March 1961, and the last one, the E-248 near the end of 1967. The first batch entered service in 1960, and were assigned to the Grupo Tecnico 7 based on the Base Aerea Militar Moron. Until 1962, 18 MS-760 were assigned to the Grupo 2-3 of Caza-Bombardeo that were then equipped with Gloster Meteor FMK.4 flying from that base near Buenos Aires. Besides their training role, special devices were developed for the tow of targets for aerial gunning and the type also excelled as fast transport of personnel. For the proposed use as an armed trainer, the MS-760s had been equipped with two pods under the wings, containing a couple of machine guns of 7,62mm as well as air-ground rockets. The operational career of the MS-760 within the Vil Brigada Aerea ended in 1967.

Since 1961 the "Paris" had been affected to complete the formation of pilots that had begun flying on T-34A Mentor and continued on T-28A Trojans. The last type was replaced later by Tucanos. Pilots of the Grupo Aereo Escuela created in the mid 60s two acrobatic groups, Escuadrilla de Acrobacia Condor and the Escuadrilla de Acrobacia Aguila (Eagle). In October 1969, this last squadron performed exhibitions with ten MS-760. Some of the type were withdrawn from service between 1985 and 1986, and the MS-760 (around 15) of the Cordoba air school were transferred to the IV Brigada Aerea, based in Mendoza. In the beginning of 1960, Moranes began to fly from the Base Aerea Militar El Plumerillo (Mendoza). In 1968, the Grupo 2 of Caza Bombardeo himself transformed in Escuela of Caza under the responsibility of the IV Brigada Aerea. This unit transformed in Escuadron 11 of Cazabombardeo was the only user of MS-760A.

Notwithstanding its extended operational career, about twenty aircraft remain flying today, used for fighter training tactics. In the future, it will be replaced progressively by the single-engine FMA IA-63 Pampas, now flying over Mendoza alongside the veterans Moranes. Now approaching the end of its operational life, the MS-760 have been modified several times, the most important of these updates being the change of the original jet engines for the more powerful Marbore II of 480 kgs. of thrust.

At the time of service with the Grupo 2 de Bombardeo, the MS-760 were locally modified in order to be able to carry two 7,62mm nose machine guns. Later, after this modification was done to the whole fleet, during overhaul some aircraft were converted to three seats and others as target tugs with a winch replacing one of the back seats and place for the operator. The modernization also included new communications equipment and some additional details. With more than 380,000 hours of flight and still soldiering in what can be called an sterling service life, the Moranes established a record of life in the FAA that will be extremely hard to beat in the future.

Annually, the FAA performs its air to air gunnery training flying from the Base Aerea Militar Mar del Plata. The good climate of the region and the possibility of flying and safe shooting over the sea, makes this the most suited place in Argentina to do this type of training. The Moranes performs both as target tug for other aircraft of the type and also for other aircraft types such as the Pucarás, Pampas, Mirages and beginning this year of 1998 with the A-4 AR Fightinghawks.

The Moranes fleet flies in the now standard camouflage of Green FS 24097, Blue Gray FS 25177 and Light Brown 20318, with Light Grey FS 26622 undersides. Some aircraft were painted in the past in a two upper color scheme of Green FS 24094 and Brown FS 20095 with the mentioned undersides of Light Grey FS 26622 (Aircraft # 233). The only national marking is the Argentina flag in the tail. Aircraft numbers are inside the front wheel door.

The target tugs aircraft are easily recognizable with brightly colored orange red (FS 22190) noses, tails and wings extremes, and flies usually with the tip tanks on, while the rest of the Moranes just use theirs for the long flight from Mendoza to Mar del Plata. The tip tanks creates an overstressed condition for wings in the aerial gunning maneuvers.

The small and noisy Moranes are a welcome and familiar sight for the inhabitants of this beautiful city of Mar del Plata. It is an unofficial and long established custom to fly low and in formation over the beaches that border the city as a salute when they arrive and again as a farewell when they leave for their home base in Mendoza.

Modelers Addendum

As far as I know, there is only one kit in 1/72 scale of this aircraft, produced by the French firm Aerofile. It is a limited-run, well-engineered, model with vacuum-formed cockpit, good interior details and three choices of decals. One for a silver French Aeronavale aircraft, other for a civilian all-white USA register, and the third for an Argentine in the old brown/green scheme. A hard to find model, but highly recommended for those looking for something different in their collection.

Photo Captions (Photos on page 107)

(All photos via the author.)

- a. Diverse Moranes operating from Mar del Plata in December 1997.
- b. MS 760 #233 with the two-color camouflage. Note the canopy appears to be from a different aircraft.
- c. MS 760 #205 target tug.
- d. Rear view. Note the polished jet exhausts.
- e. Nose view showing guns with their covers on.
- f. Ground crew working on the nose machine guns.
- g. Note the earlier silver color scheme on these aircraft flying over Santa Fe in 1966.
- g. Drawing of the overall silver scheme used in the sixties.
- h. Box art for the Aerofile kit.

Eduardo E. Marber (SAFCH #1344), Casilla de Correo 1370, 7600 Mar del Plata, Argentina.

PARAGUAYAN MILITARY PIPER

Antonio Luis Sapienza

A few Piper models have been in service in the Paraguayan Military Aviation. The Paraguayan Naval Aviation used a Piper PA-12 in the 60's; this was the only Piper type flown by the Navy. The Paraguayan Air Force is currently flying a Piper PA32 Lance, a Piper PA-23 Apache, and three Brazilian-built Pipers. The Enaer T-35 Pillan, which is a development of the Piper PA-28, and originally called PA-28R300 will be covered in a future article.

PIPER PA-12 Super Cruiser: In 1966, Paraguayan Naval Aviation bought a Piper PA-12 from the local market for basic training. Unfortunately, the c/n and the previous ZP- identity could not be found in the Navy files. It was registered as NAVAL 125 (a serial previously used by a naval Vultee BT-13 which was lost in an accident in the Paraguay River in 1965). It was intensively used as a primary trainer at the Naval Aviation School. According to the testimony of some Navy Officers of that time, the PA-12 was originally painted in an attractive color scheme of cream and red, but once in the Paraguayan Naval Aviation, it was painted overall silver. It had black anchors painted in the four wing positions; the serial was painted in both sides of the fuselage in black square letters and numbers and the Paraguayan flag colors (red-white-blue) were painted in the rudder, with a yellow star on the white stripe. A matt black antiglare panel was also painted in the engine cowlings.

PIPER PA-32R-300 Lance: A PA-32 Lance was the first Piper type acquired by the FAP. It was bought in 1988 from the local market. Its c/n is 32R-7880027 (ex ZP-PNU) and it was registered as FAP 0214 for the Special Air Transport Group (GATE) in the FAP. It is painted in overall glossy white with two thin red stripes along the fuselage. It has red wing tips and the Paraguayan roundel is painted in two wing positions (upper left and below right) and the serial in black square numbers in the opposite positions on the wings and also on the vertical stabilizer. The Paraguayan flag is painted in the rudder, with a yellow star on the white stripe. It was still in service in the GATE in 1999.

PIPER PA-23-160 Apache: A single example was acquired under special circumstances in 1991. This plane was captured at a clandestine runway in Paraguay while trying to smuggle electronics to Argentina. In fact, this was an Argentine registered plane, but its previous identity is unknown, although we know its c/n: 23-1916 (Maybe our good friend Dan Hagedorn can give us some information on its previous Argentine identity). The plane was given to the Paraguayan Air Force and it was assigned to the GATE as FAP 0220. It received the standard GATE color scheme and it is still in service in 1999.

EMBRAER EMB-720D Minuano: This is a Brazilian-built version of the Piper PA-32301 Cherokee Six, a sole example was acquired under circumstances similar to the one of the pre-

viously described Apache. This plane had the Brazilian registration PT-RKU (c/n 720152) and it was captured in a clandestine runway when trying to smuggle electronics. It was given to the GATE in the FAP and registered as FAP 0203 in 1991. It received the GATE standard color scheme and it was severely damaged during a hard landing in 1996 at Ñu-Guazú AFB and later WFU.

EMBRAER EMB-721C Sertanejo: This is a Brazilian-built version of the Piper PA32R-300 Saratoga. One example was acquired in the same circumstances as the previously described Minuano. This plane had the Brazilian registration PT-EQN (c/n 721119) and it was given to the GATE in the FAP in 1991. It was registered as FAP 0204 and it was painted in the GATE standard color scheme. It is currently in service at Ñu-Guazú AFB near Asunción.

EMBRAER EMB-810C Seneca II: This is a Brazilian-built version of the Piper PA-34200 Seneca. One example was acquired in the same circumstances as the Minuano and Sertanejo. This plane had the Brazilian registration PT-EJL (c/n 810095) and it was given to the GATE in the FAP in 1991. It was registered as FAP 0223 and it was painted in the GATE standard color scheme. It is currently in service at Ñu-Guazú AFB near Asunción.

Photo Captions Photos on page 74.

(All photos from the author.)

- a. Piper PA-12 Super Cruiser, 'NAVAL 125', Paraguayan Naval Aviation, 1966.
- b. Piper PA-32 Lance, '0214', GATE/FAP Ñu-Guazú AFB, 1993.
- c. Piper PA-32 Lance, '10214', GATE/FAP Ñu-Guazú AFB 1993.
- d. Piper PA-23 Apache, '02200', GATE/FAP, Asunción International Airport, 1991.
- e. EMBRAER EMB-720D Minuano, '0203', GATE/FAP, Ñu-Guazú AFB, 1993.
- f. EMBRAER EMB-721C Sertanejo, '0204', GATE/FAP, Ñu-Guazú, 1993.
- g. EMBRAER EMB-810C Seneca II, '0223', GATE/FAP, Ñu-Guazú AFB, 1993.

Acknowledgments: The author would like to thank Capt. PAM Diego Galvan and Capt. PAM Liduvino Vielman (both ex-GATE pilots) for the information about the FAP Pipers. Thanks are also expressed to Brig. Gen. Blas Ramirez (ex-GATE Commander) for the permission to take pictures of the GATE planes and to Rear Admiral José Ocampos Alfaro (ex-Paraguayan Naval Aviation Commander) for the information on the PA-12.

Antonio Luis Sapienza (SAFCH #1160), Casilla de Correo N#2721, Asunción, Paraguay. E-mail: asapienza@ccpa.edu.py

1/48 Scale

Shavrov Sh-2 in Profile

Bill Devins (SAFCH #557), 358 Arbor Rd., Lancaster, PA 17601, USA



BLACK



RED



*SSSR-K8 (СССР-K8) c/n 31253 of the Soviet Sanaviatsiya (Ambulance Aviation) which force-landed in Finland in 1937. Note that forward cabane strut is anchored inside the cockpit opening on this Sh-2. White overall (or maybe silver, though one Russian source specifies "sky blue") with black lettering and red crosses. Registration above and below the wings reads from the rear, "СССР" to one side and "-K8" on the other. Large red crosses are displayed on each lower wingtip; the red cross on the upper surface may have been painted across the center section between the codes. The Cyrillic lettering on the bow reads *SANAVIATSIYA* over the abbreviation "*SOKK i KL*", for *Soyuz Obshchestv Krasnogo Kresta i Krasnogo Polumesyatsa* (Union of the Red Cross and Red Crescent Societies). Soviet civil registrations in the *SSSR-K* series were reserved for *Sanaviatsiya* and its successors.*



WHITE



BLUE



NATURAL METAL



YELLOW



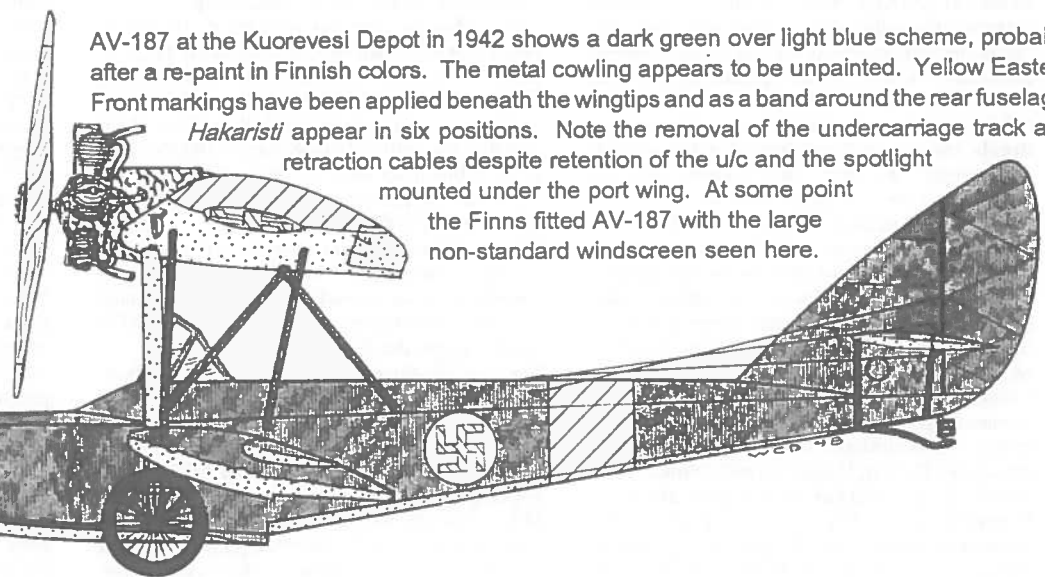
DARK GREEN



LIGHT BLUE



OLIVE GREEN



AV-187 at the Kuorevesi Depot in 1942 shows a dark green over light blue scheme, probably after a re-paint in Finnish colors. The metal cowling appears to be unpainted. Yellow Eastern Front markings have been applied beneath the wingtips and as a band around the rear fuselage. *Hakaristi* appear in six positions. Note the removal of the undercarriage track and retraction cables despite retention of the u/c and the spotlight mounted under the port wing. At some point the Finns fitted AV-187 with the large non-standard windscreen seen here.



An Sh-2S ambulance serving in Soviet military markings in 1942. Note the plexiglass cover aft of the cockpit, and the rounded nacelle and faired spinner/engine combination. Colors are dark olive green over light blue with red and white markings.

Rumanian Air Force: The Prime Decade 1938-1947, Denes Bernad. Squadron/Signal Publications. Available from Squadron Mail Order, 1115 Crowley Dr., Carrollton, TX 75011-5010, USA. \$11.95.

This is the fourth Squadron/Signal publication in their series on small air forces in WWII, and it is the best by far. This is partly because of the subject; the activities of the Romanian Air Force are less well known than the previous subjects of this series (Poland, Finland, and Hungary). However, the lion's share of the credit must go to the author whose extensive research and no-nonsense approach sets a high standard for this type of publication. A series of quotes from the "Foreword" will illustrate this point:

"I have settled on using Rumania for the country's name, rather than the recently accepted Romania or the obsolete Roumania. This is primarily because the reference English dictionaries still use this wording as the main form. Moreover, the languages of the major European powers with which Rumania has had historic connections (such as France, Russia, and Germany) all write or pronounce the country's name with a 'u'"

"I found apparent confusion when referring to the official title of the wartime Royal Rumanian Air Force. All sources published in Rumania and abroad so far have used *Forțele Aeriene Regale ale României* (FARR). Although this form appears authentic, the author did not come across any official Rumanian document using this form. Several documents and laws, including those published in the Rumanian State's official gazette, '*Monitorul Oficial*', refer to the Air Force as *Aeronautica Regală Română*, or Royal Rumanian Aeronautics. Accordingly, this title - abbreviated ARR for simplicity - is used throughout this book."

"The place names issue was particularly difficult to deal with in multi-ethnic regions, with more than one name being used for localities and geographic terms. Places in Transylvania, for example, have both Rumanian and Hungarian names. Localities inhabited by *Volksdeutsche* (ethnic German people) had German names which often appear in Luftwaffe documents. I therefore used the Rumanian name first for places in Southern Transylvania which remained within Rumania's borders throughout the war, Hungarian and German place names, if any, appear in brackets after the Rumanian name. For Northern Transylvania, which was returned to Hungary during August 1940, the official Hungarian name is used first with the Rumanian (and German) version in brackets. I have similarly handled the cases of Southern Slovakia, returned to Hungary during November of 1938, and Bessarabia and Northern Bukovina, incorporated into the Soviet Union during June of 1940 and regained by Rumania the following year." Another daring departure from the usual approach was to start the text with an extensive summary of ARR activities followed by detailed discussions of each branch of service (fighters, bombers, etc.). While this leads to duplication, I found this greatly assisted me in learning "my history". A listing of the chapters and sub-headings will illustrate this point while summarizing the content:

"Brief History of the *Aeronautica Regală Română*" 10 pages including 17 photos. 'Restructuring and Rearming', 'The Bessarabian Campaign', 'Next Stop: Stalingrad', 'Re-equipping', 'Defending the Homeland', 'Turning the Arms against the Luftwaffe', 'The Western Front', 'The Last Year of War', 'Life in Troubled Peacetime', 'Fighters' 28 pages including 50 photos and table. 'Battle for

Bessarabia and Trans-Dnestra', 'Stalingrad', 'Re-Equipment', 'The Third Campaign', 'An American Interlude', 'The Hot and Bloody Summer of 1944', 'The Coup', 'The Transylvanian Campaign', 'In Pursuit of the Enemy', 'The Last Year of War', 'The War is Over. What Now?', 'Bombers' 18 pages including 34 photos and table. 'Restructuring', 'War in the East', 'Battle of Odessa', 'A Quite Year', 'Over the Don Bend', 'Revitalizing ARR', 'The ARR's Third Campaign', 'Enter the Stuka and the Henschel', 'In Defense of the Homeland', 'The Turning Point', 'The Last War Effort', 'Reconnaissance and Army Co-operation Aircraft', 4 pages including 7 photos and table. 'Seaplanes' 4 pages including 9 photos and table. 'Transports' 4 pages including 9 photos and table. 'Training and Liaison Aircraft' 5 pages including 14 photos and table.

The tables are particularly useful listing aircraft, start of service, total number, serial numbers, & notes. An excellent map (conveniently on the back of the front cover since it will have to be constantly referred to as the text is read) shows Romania with the boundaries and place names reflecting the situation existing at the beginning of Operation Barbarossa. Unfortunately, there are no maps showing the area from Odessa to Stalingrad in which so much of the Romanian Air Force's combat took place. The reproduction of the photos (including 5 contemporary color photos) is excellent and the color art work outstanding.

Color side-view drawings include: P.11F, P.24E, Hurricane Mk.I, IAR 80A, Bf 109E-3, He 112B, Bf 109E-7, MiG-3, Bf 109G-1, IAR 81, Bf 109G-2R6, Fw 190A, IAR 80, Bf 110C, Bf 109G-6, P.37B, He 111H-3, Savoia S-79B, Ju 88A-4, P.23, Potez 63-11, Ju 87D3, Hs 129B-2, IAR 38, Savoia JRS 79B1, Ju 878D-5, Blenheim Mk.I, Ju 88D-1, CANT Z.501B, Lockheed 10A, Potez 650, He 111E-3, Junkers W34, Fleet F-10G, SET 7Kd, Nardi FN.305, Fi 156Ca-3. While the majority of these drawings are of aircraft carrying the 'Michael's Cross' national insignia, there are several with the pre-war roundel and many with the roundel used when the ARR fought against the Axis.

The small-air-force modeler will find much inspiration here. Many familiar aircraft can be built in Romanian markings. Besides the well-known Romanian Bf 109, He 111, Ju 88, and Ju 87, the following lesser-known types carried Romania markings: PZL P-24, P-23, & P-37, Hurricane, MiG-3, Fw 190, Me 110, Potez 633, Hs 129, Blenheim, & CANT Z.501. There's a photo showing a PZL P-11b with Romanian roundels placed asymmetrically on the wings, a la PAF. Also, this is the first time I've seen photos of pre-war Romanian aircraft carrying tri-color stripes (blue, yellow, red) on the wings.

Here a chance to use those kits you've stored away waiting for a color scheme to show up without RAF, French, or Italian roundels, German crosses, or Soviet stars.

The "Rumanian Air Force" is an excellent publication that I can unreservedly recommend to all enthusiasts of the small air forces. I've read it completely through twice already, and I've enjoyed it more each time. In fact, this book is my nomination for the "Best Small Air Force Book of the Year".

What's next from Squadron/Signal? Bulgaria?

Review copy provided by the author.

Hrvatsko Ratno Zrakoplovstvo u Drugome Svjetskom Ratu (The Croatian Air Force in the Second World War), by Tihomir Lisko and Danko

Canak. Nova Gradiska 1998.

Boris Greguric, of Croatia, writes, "I'm sending you some pages copied from a new book on the Croatian Air Force in WWII. This is the second book published on this topic and differs from the first in being somewhat thinner and bi-lingual. [Editor's note: The first book referred to here is probably "Zrakoplovstvo Nezavisne Države Hrvatske 1941-1945 (Air Force of the Independent State of Croatia 1941-1945)" by Frka, Novak, & Pogacic which was reviewed in *Insignia* #12.] Published in landscape format, similar to the Squadron/Signal 'In Action' books, but this book is quite a bit thicker. There are 136 pages (29.5 cm by 21 cm; about 12 inch by 8 inch), 184 b&w photos, many tables, 5 pages of drawings of Croatian Bf 109 camouflage schemes, and 8 pages of color profiles depicting other types (28 in all). As for the English, it is far from perfect, but it could have been worse. The book is a private venture, printed in only some 500 or 600 copies, therefore it is somewhat pricey at around \$40. It can be ordered directly from the authors: Tihomir Lisko, Kralja Zvonimira 279, 35400 Novo Gradiska, Croatia or Denko Cizak, Gajeva 33, 35400 Nova Gradiska, Croatia. They can also provide detail regarding the exact price, I understand retailers are welcome."

The use of parallel English-language text is most welcome. However, the English translation is somewhat uninspired as illustrated by the chapter titles: "The Croatian Air Force in the Second World War" 4 pages including one photo and a map. 'Equipping and Utilization of the Air Force in 1941' 17 pages including 28 photos and table 'Composition of the 1st Squadron of the 1st Group at Zagreb Air Base - September 1941'. 'The Year 1942' 16 pages including 28 photos and table listing 'Organization and Composition of the Air Force - 1 January 1942', 'The Year 1943' 16 pages including 38 photos and table 'Organization and Composition of the Combat Air Force - 18 October 1943'. 'The Year 1944' 11 pages including 13 photos and table 'Organization and Composition of the Military Air Force - 1 October 1944'. 'The Year 1945' 11 pages including 9 photos and tables 'Comparative Chart Old and New Serials on Dornier Do 17E Aircraft' and 'Aircraft and Gliders used in Croatia'. 'The Croatian Air Force Legion: The 4th Air Force Fighter Group', 26 pages including 46 photos and tables 'Aircraft used in the Croatian Air Force Legions', 'List of the Most Successful Pilots of the Croatian Legion', and 'Extracts from the Flight Diaries of the 4th Air Force Group'. 'The 5th Air Force Bomber Group' 8 pages including 16 photos. 'Biographies' 4 pages with biographies of 4 airmen including 4 photos. 'Official Regulations on Aircraft Markings' 2 pages. 'Other Markings' 2 pages including one photo and 5 drawings of insignia. 'The Colouring and Markings of Individual Aircraft Types' 22 pages including 14 b&w side-view drawings of Croatian Bf 109 and 28 color side-view drawings [Potez XXV, Breguet XIX, Rogozarski PVT & R.100, Fizzir FN, SIM X & XI, RWD XIII, AVIA BH.33, AVIA FL.3, Salamandra, Zogling 35, Grunau Baby, Komar bis, MS 406, Fi 176, MC.202, Bf 109E, Bf 109G (5), Bf 110, Do 17Z (3), Bf 108].

The text is somewhat stilted and it consists of rather too much 'organizational' information to be a good read. However, the tables are informative and the photos are magnificent, nearly all never before seen in publication. Many types are shown in Croatian markings for the first time, e.g. the Me 110. It is to the authors' credit that they point out when a type is used in Croatia is conjecture and when

there is photographic proof. Also, refreshing is their inclusion of gliders in the photos and drawings.

The modeler will find much of interest here. Besides the well-known Bf 109 and Do 17Z carrying the 'King Zvonimir cross' national markings (referred to by the authors as the 'black trefoil'), Croatian insignia can also be applied to Ms-406, Fi 167, MC 202, and Do 17E. The Rogozarski's, Fizir's, and SIM's will remain the territory of the more adventurous scratch builder.

The quality of this publication is first rate: sturdy covers, glossy paper, photo reproduction running from fair to excellent (but mostly excellent), and excellent b&w and color drawings. Gone are the days when we had to settle for poor production quality to get esoteric information. Now we are getting both esoteric information and quality publications.

The Croatian Air Force in the Second World War will appeal both to the enthusiast and the modeler. It is recommended without reservation.

Review copy provided by Boris Greguric.

La Legion Condor, Patrick Laureau and Jose Fernandez. Collection History de l'Aviation #7. Lela Presse, 29 rue Paul Bert, 62230 Outreau, France. Hardbound. 290FF plus 30FF postage.

Another excellent book from the publisher of Avions, this 256-page, A-4 size, hardbound book tells the story of the Legion Condor in the Spanish Civil War. The nature of the content and the quantity of coverage is revealed by a summary of the contents: (1) L'Espagne avant la Guerre" 4 pages including 8 pages. (2) "Operation 'Feuerzauber'" 19 pages including 31 photos (He 51 & Ju 52/3m), one map, and multi-view scale drawing (Ju 52/3m). (3) "La Legion Condor" 2 pages including 4 photos. (4) "Le Groupe de Reconnaissance A/88" 26 pages including 50 photos (He 45, He 70, Do 17E, Do 17P, & Hs 126), table of Do 17 serving in Spain, and 3 multi-view scale drawings (He 70, Hs 126, & He 45). (5) "Le Seefliegerstaffel AS/88" 16 pages including 27 photos (He 60, He 59, Ar 96, & He 115) and 2 multi-view scale drawings (He 60 & He 59). (6) Groupe de Chasse J/88" 46 pages including 101 photos (He 51, Bf 109, & Ar 68), table of all He 51 and Bf 109 serving in Spain, 2 multi-view scale drawings (He 51 & Bf 109). (7) L'Aventure Stuka en Espagne" 15 pages including 36 photos (Hs 123 & Ju 87) and 2 multi-view scale drawings (Hs 123 & Ju 87). (8) "Groupe Experimental de Bombardement VB/88" 11 pages including 24 photos (Ju 86, Do 17, & He 111) and one multi-view scale drawing (Do 17E). (9) "Groupe Experimental de Chasse VJ/88" 4 pages including 9 photos (Hs 123, Bf 109, & He 112). (10) "Le Groupe de Bombardement K/88" 50 pages including 121 photos (Ju 52/3m & He 111), table on all Ju 52 and He 111 serving in Spain, and multi-view scale drawing of He 111B. (11) "S/88 Etat-Major" 10 pages including 23 photos (Fi 156, Bf 108, & Ki 32). (12) "Le Transport du Courier" 2 pages including 4 photos (Ki 32 & Miles M-3). (13) "Service Meteorologique" one page with 2 photos (Junkers W 34). (14) "Avions Livres Directement aux Espagnols" one page with 5 photos (Ar 66, Bu 131, Bh 133, & Go 145). (15) "Les Relations Economiques Germano-Espagnoles" 4 pages including 3 photos. (16) "La Participation de la Heer" 13 pages including 38 photos, 4 multi-view scale drawings (Pz.Kpfw.I Auf A, Pz.Kpfw.I Auf B, Pz.Befw.I Auf B, 7 PAK 35.36). (17) "Flakabteilung F/88" 4 pages including 8 photos and multi-view scale drawing (FLAK 18 (85/56)). (18) "La participation de la Kriegsmarine" 6 pages including 15 photo and multi-view scale

drawing ('Deutschland'). (19) "Bilan de l'Intervention Allemande en Espagne" 6 pages including 10 photos.

Fifteen pages of color drawings consist of the following. Color paintings: Pz.Kpfw.IA, Pz.Befw.I, T-26. 6 uniforms, Bf 109D, Hs 123, & He 51. Color side-view drawings: He 51 (4), Ar 68 (1), He 112 (1), Bf 109 (14), Ju 87 (2), He 45 (1), He 70 (2), Hs 126 (1), Ju 86 (1), Do 17 (2), Fi 156 (1), Ju 52 91), He 111 (10), He 59 (1), and He 60 (1).

The presentation of this material is, as expected from Avions, first class. The reproduction of the photos is excellent, the scale drawings are well done although a bit small (this is no problem if an enlarging copying machine is available), and the color drawings are vibrant. The lack of color plan views will bother some modelers, but a study of the photos should allow the experienced modeler to reconstruct reasonably accurate markings and camouflage patterns for the upper and lower surfaces.

As can be seen from the preceding summary, the acquisition of this book should increase by many-fold the amount of information and the number of photos previously held by the average student of the Spanish Civil War. And, I have no doubt that even the enthusiast with an extensive collection of material on the SCW will find much new in this book.

La Legion Condor is highly recommended to anyone interested in the Spanish Civil War. A passing acquaintance with the French language will greatly enhance one's understanding of the text. However, because of the extensive illustrative material, a knowledge of French is not necessary to enjoy and benefit from this book. In particular, this book will allow the enterprising modeler to complete a comprehensive collection of models of the Legion Condor. [Editor's note: I believe that kits are available to build models of all the aircraft illustrated in this book except the Klemm Ki 32 and the He 111B. The lack of a kit of the Ki 32 is understandable, but the absence of a kit of the He 111B is a shame.]

Review copy provided by Michel Ledet of Lela Presse.

La Campagne des Pays-Bas, #9 Batailles Aeriennes. Sarl Lela Presse, 29 rue Paul Bert, 62230 Outreau, France. 69FF. Four issues per year 210FF.

With each new issue, the Batailles Aeriennes series gets better. This installment on the Dutch Air Force's 'fight against overwhelming odds' is, without a doubt, the best issue in this excellent series. Produced in the usual A-4 format with 84 pages filled with photos of outstanding quality, exciting color drawings, informative maps & tables, and French text. The photos are mostly of aircraft, but there are enough photos of people, and land and naval units to add intimacy to the narrative.

Content: (1) "Les Pays-Bas et leur armee en 1940" 5 pages including 8 photos, map, and a table listing all aircraft available on 10 May by base, type, & serial number. (2) "Le plan allemand" 4 pages including 2 photos and a table listing Luftwaffe units engaged against Holland by base and number of aircraft by type. (3) "La DCA neerlandaise" 4 pages on Dutch anti-aircraft equipment including 11 photos. (4) "10 mai 1940 - Une dure journee pour les Fokker" 19 pages including 50 photos and map of Rotterdam. (5) "11 mai 1940: journee plus calme" 4 pages including 10 photos. (6) "12 mai 1940: la situation se deteriore". 5 pages including 12 photos. (7) "13 mai 1940: jonction des troupes allemandes" 3 pages including 8 photos. (8) "14 mai 1940: la capitulation" 7 pages including 18 photos. (9) "L'intervention aerienne alicie du 10 au 15 mai

1940" 3 pages including 7 photos. (10) "Ecoles et avions d'entrainement neerlandais" 4 pages including 13 photos. (11) "Le MLD dans la tourmente" 5 pages including 8 photos. (12) "Camouflage et marques des avions neerlandais" 6 pages including 18 photos. (13) "Les maquettes d'avions neerlandais au 1/72e" 3 pages [Editor's note: Kits are available for a surprising number of Dutch aircraft although many are hard-to-find resin kits. The only readily available kits are for the Fokker D.XXI, G-1, and T.VIII. About the Fokker C.VD it is said, "Domage (et o scandale!) mais il n'existe aucune maquette de cet appareil, du moins dans cette version." Yes it is a scandal. I don't understand why the Dutch, who are so good at so many things, do not have a thriving industry turning out injection-molded kits of Fokker aircraft.] (14) "Militaire luchtvaart tenues de vol et maechanicien: Mai 1940" 2 pages with 5 color drawings Dutch aviation personnel in uniform. (15) Color 3-view drawings: Fokker D.XXI; Fokker G.1A; and Fokker T.V. (16) Color side-view drawings: Bf 109E; He 111; Fokker C.VD; Douglas DB-8; Fokker C.X; Fokker T.VIIIw; Fokker S.IX (in a beautiful blue and silver color scheme); Fokker C.XIVw; Fokker C.VIIw; Fokker D.XXII; Koolhoven FK-51; and Dutch Fw 58.

The selection of photos is marvelous; very few are familiar to this reviewer. While the familiar aircraft, i.e. the Fokker D.XXI & G.1, and Douglas DB-8 get their share of attention, the hard-working Fokker biplanes get extensive coverage. The coverage of the often-neglected trainers and naval aircraft is particularly outstanding. All photos and drawings are of Dutch aircraft carrying the orange triangle national insignia with a few of German aircraft destroyed by the Dutch defenses.

La Campagne des pays-bas is a "must" for all enthusiasts of the small air forces. Any library without one is all the poorer for it.

Review copy provided by Michel Ledet of Lela Presse.

Curtiss III, IV & H750 Hawk, Bellomo, Cordon Aguirre, Marino, and Nunez Padin. Serie Fuerza Aerea Argentina #5.

This latest in the series on the aircraft of the Fuerza Aerea Argentina (Argentine Air Force) is the long-awaited authoritative account of the Curtiss Hawk in the land of the Pampus. It is also the first in this series to cover more than one aircraft type: The biplane Hawk III (with retractable undercarriage) and the monoplane Hawk 75 (with fixed undercarriage). This monograph (or is it a "duograph") is in the usual format (16 cm by 22.5 cm; 28 pages) and quality (superb reproduction of photos and excellent color drawings) we have come to expect from this series.

The content: (1) "Historia" 6 pages on the Hawk III, IV, and 75 in Argentine service. (2) "Tecnica" 2 pages. (3) "Identification" 5 pages detailing the history of eleven Hawk III, one Hawk IV, one 75H, and fifty Hawk 75O. (4) Colores & Insignias" one page. The photos: Hawk III (11), Hawk IV (1), and Hawk 75 (15). Color side-view drawings: Hawk 75 (4). Color photos of squadron insignia (4).

As a modeler with a fetish for "doubles" (e.g. dog-fight doubles), I can't imagine a better way to represent aeronautical progress in the late 1930s than the pairing of an Argentine Hawk III with an Argentine Hawk 75. In 1/72-scale, the Hawk III is now available from MPM (eliminating the nasty job of converting the fixed-gear Monogram F11C). There is a variety of 1/72-scale P-36 kits that can be converted into a fixed-gear 75, but the subtle shape of the landing-gear housing appears to be a challeng-

ing scratch-building project and I wish someone would come out with a resin-cast set.

Serie Fuerza Aerea Argentina #5 on the Argentine Curtiss Hawks is another outstanding addition to the literature on Argentine military aviation and it can be enthusiastically recommend to all aficionados of the small air forces, especially those interested in the aviation of Latin America. It should also be of interest to all modelers who have longed to add a model of the Argentine Hawk 75 to their collection.

[Editor's note: When ordering your copy of this book on the Curtiss Hawk you should consider also ordering the book on the Argentine T-28 which arguably is the best book in this series.]

Review copy provided by Jorge Nunez, the editor of this series.

Escuadrilla Acrobatica Cruz del Sur: La Historia de sus Actuaciones, Integrantes y Aviones, by Atilio Baldini. Edicion Especial Fuerza Aerea #2. Editado por Jorge Felix Nunez Padin.

This, the second in Jorge Nunez's series of specials on the aircraft of the Argentine Air Force, covers the F-86 Sabres of the Argentine Southern Cross acrobatic team. In landscape format, with 48 pages (29 cm by 20 cm / 10.5 inch by 7.75 inch) the Spanish text covers: Antecedentes, Origen y creacion, Las actuaciones y los integrantes, La rutina, Los aviones, Historias individuales, Accidentes, Colores e insignias, Recuerdos de la escuadrilla, Semblanze de los pilotos, Eluso de la cruz del sur en otras aeronaves, Resumen de las actividades, and Fuentes."

Print on high-quality glossy paper are 20 b&w photos (including 2 of the team's Su-29AR), 4 color photos, 4 color photos of unit badges, and 7 color side-view drawings of very colorful Sabres.

In case you're uncertain you'll be able to get out of the Spanish text, try High-School Spanish out on the excerpt from the individual history of C-101

"Numero de Construcccion (c/n) 191-848. Ex USAF 52-5152A. Este avion fue uno de los que arribaron con la primera tanda el 26 de Septiembre de 1.960 a los mandos del Capitan Augusto Jorge Hughes. Al momneto de ser recibido por la Fuerza Aerea Argentina habia acumulado en Estados Unidos 1 272,254 horas. En 1.960 volo 32:25 horas y en 1.961 68:35 horas, por lo que al inicio de 1.962 llevaba voladas en la Argentina 101 horas. Durante ese ano acumulo 204:35 horas, no registrando actividad durante los meses de Noviembre y Diciembre.

"El C-101 se destruyo en un accidente el 8 de Mayo de 1.968 a las 8:45 horas en San Carlos, provincia de San Juan cuando era pilotado por el Capitan Juan Manuel Correa Cuenca al producirse una colision en vuelo a 6 5000 metros de altura con el C-128 al mando del Teniente Daniel Otero obligando a ambos pilotos a eyectarse, ilgando los dos ilesos a tierra.

"El C-101 totalizo 877:40 horas de vuelo desde su entrega en los Estados Unidos.

"Actividad en la Escuadrilla Acrobatica 'Cruz del Sur': Al incorporarse a la Escuadrilla fue bautizado con el nombre de 'Beta' que llevaba pintado en el costado izquierdo del fuselaje bajo la cabina. Este avion fue uno de los que participo en Mar del Plata al mando del Capitan Cesar Alberto De la Colina como farol y de la grabacion de sonidos efectuada por la RCA Victor el dia 2 de Junio de 1.962, por lo que aparece en la fotografia de la tapa del disco. Otra participacion que puede ser acreditada con certeza es la que se llevo a cabo en Salta el 17 de Junio."

Escuadrilla Acrobatica Cruz del Sur is an excellent publication that can be recommended to any one

interested in acrobatic aircraft of the smaller air forces.

Review copy provided by Jorge Nunez, the editor.

Translado de Aeronaves Militares, J. Eduardo M. Motta. Historia Setorial de Aeronautica Brasileira #15.

This little softbound book (15.5 cm by 22.5 cm; 159 page) is without a doubt the most unusual research project I've ever reviewed for SAFO. The author's intent is to document the delivery of all 1,499 military aircraft delivered to Brazil by flight originating from the USA, Canada, England, and Argentina from 1940 to the present.

The first section (one page) lists all fatal accidents which total an amazing-low four aircraft (Na-72 in 1940, PT-19 in 1943, B-25 in 1948, & F-5B in 1974).

The second section (one page) lists non-fatal accidents (BT-15, PT-19, F-24, B-18, & P-47). The third section (3 pages) list the total of aircraft delivered by country of origin and type. The fourth section (22 pages) describes 37 delivery flights (this is the most opaque section for the reader who does not read Portuguese).

The majority of the book (110 pages) is devoted to three appendices. The first contains tables listing each delivery flight by the date the flight began and includes city of origin, type of aircraft, original serial number, the Brazilian serial number, and the pilots who flew each aircraft. This accounting begins on 11/09/40 with the flight of 6 North American NA-72 and ends on 19/08/89 with the delivery of 4 Northrop F-5E. The second appendix lists the same information except for aircraft that were delivered one at a time. It is interesting to note that the information in these tables is complete from the beginning up to a few years ago when a lost of "?" began appearing in the tables.

The text is supplemented by a number of photos of aircraft in Brazilian markings. There are 40 of these photos and their reproduction varies from fair to good.

Translado de Aeronaves Militares is a very strange book. The author is to be admired for the amount of painstaking research that must have gone into it and for the outstanding clear way he presents the data. However, I cannot help asking myself, "Why?"

Review copy provided by Sergio Luis dos Santos.

Fokker D.21, by Przemyslaw Skulski. Seris "Pod Lupa" #10. Ace Publications, ul. Dawida 20/5, 50-527 Wroclaw, Poland.

The Fokker D.21 and it service in Holland, Denmark, and Finland have been well documented in periodicals, books, kits, and decals. However, this new monograph from Poland is a welcome addition to the canon. Its thirty-two A4-size pages contain, beside the Polish text and a 2-page English summary, 42 b/w photos (4 of D.21s under construction, 4 of Danish D.21 cockpit, 5 Dutch D.21, 7 of Danish D.21, 13 of Finnish D.21, and 9 of kits, models, & decals), 32 color photos (16 of Mercury-engine D.21 in a Finnish museum and 16 of a replica in a Dutch museum), 4 pages of 1/72-scale 6-view drawings [Dutch and Finnish series II, III, & IV (Wasp engine)], 6 side-view drawings showing development from the prototype to Finnish D.21 with retractable landing gear, a full-page cutaway drawing (Dutch D.21), a page of sketches of details (cowlings, propellers, landing gear, elevator & rudder, pitot tube, etc.), 6 tables (Top scoring Finnish D.21 pilots during the Winter War, Top scoring Finnish pilots during the Continuation War, Victories by Dutch D.21 pilots in May 1940, Technical data, Kits, and Accessories & decals), 2 color 4-view drawings (Dutch & Finnish), and 6 color side-

view drawings (2 Dutch, one Danish, & 3 Finnish). The reproduction of the photos, both b&w and color, is outstanding, the scale drawings superb, and the color drawings very colorful. The modeling section covers the 1/72-scale Frog/Novo, Matchbox, & Kora kits, and the 1/48-scale Classic Airframes kit, as well as decals and accessories.

The ACE Publication's monograph of the D.21 would be a welcome addition to any enthusiast's library no matter how much material he already has on this aircraft. I highly recommend getting this book while we wait for the definitive kit of the Fokker D.21 with alternate parts to build the Danish and all Finnish versions. Well, I can dream, can't I?

Review copy provided by Przemyslaw Skulski of Ace Publications.

Yak-1/Yak-3, by Robert Bock. Aircraft Monograph #13. AJ Press, PO Box 98, 80-305 Gdansk 5, Poland.

Since the opening up of Russian archives, much information has surfaced on Soviet aircraft operations in the Great Patriotic War. Therefore, it was with the greatest of expectations that I opened up this recent addition to AJ-Press' series of Aircraft Monographs.

The presentation is up to, and in many ways exceeds, the high standards we have come to expect from this publisher, and the fact that the entire text is in English adds to its usefulness. In the usual A4 size with 76 pages on high-quality glossy paper sturdily bound between rugged card cover, this monograph offers a plethora of well-reproduce photos, oodles of detailed scale drawings, and a multitude of color drawings. The dramatic cover painting shows a Yak-1 chasing a doomed Ju-87 over an otherwise peaceful northern lake. On the rear cover is a color painting of the cockpit interior of a Yak-1 with the instruments identified by number. The color work inside consists of a 4-view drawing of a Yak-1b flown by Major Yerebin on the southern front in 1943, a 3-view drawing of a Yak-3 flown by Leon Ougloff of the Normandie-Niemen in East Prussia in March 1954, 20 side-view drawings [the all-red prototype, 17 a/c carrying red stars (4 with the Normandie-Niemen and one flown by Jerzy Czownicki of the 1 PLM Warszawa), one in post-war Yugoslav markings, and one in Luftwaffe markings]. The scale drawings, all in 1/48-scale, are the usual AJ-Press delight: 6 fold-out pages contain nine 6-view drawings and 45 (yes, 45; this is not a typo) side-view drawings of every conceivable variation. The "Technical Description" section includes drawings of structural components and the cockpit interiors for both the Yak-1 and Yak-3.

The portion of the text devoted to "Yak in Allied Units" is a disappointingly-short 2+ pages describing the Yaks in service with the Normandie-Niemen and 1 Pulk Lotnictwa Mysliwskiego during the war and the post-war use of the Yaks in Poland and Yugoslavia.

The text is translated into reasonably good English. The description of the developmental history is as interestingly as any story of an aircraft's development can be, and the section on markings and camouflage is informative. However, the narrative bogs down when presenting the service history of the Yaks. As an example of the style: "On 16 December 1942, during a combat in Velikiye Luki area, eight Yak-1s of the 653 IAP engaged sixteen Junkers Ju 88s escorted by ten Bf 109s of JG 51. The Soviets shot down four aircraft for no loss." The average reader will not be able to take many pages of this turgid style in any one sitting and the

continuing use of bold face for aircraft designations quickly becomes irritating. IN addition, the lack of any maps adds to the readers confusion and frustration.

AJ-Press' monograph on the Yak-1/Yak-3 can be recommended for its wealth of photographic material and for the excellence of its scale and color drawings. The casual reader will find the text hard sledding, although the serious student of Soviet fighter combat will find great joy in correlating the descriptions of combats against German sources.

[Editor's note: The member who provided this book for review was anonymous. Please let me know your name so I can credit your account.]

Heinkel He 115, by Zbigniew Lalak. Profile Lotnicze #1. Pegaz, ul. Stoklosy 1/93, 02-787 Warszawa, Poland.

This new series of "Aircraft Profiles" from Poland gets off to a great start with this marvelous A4-size book of 64 pages with parallel Polish/English text. When I sat down to review this book, I was expecting a dull evening. Was I ever surprised! The writing style is fast paced and informative. This is one of the most enjoyable "reads" I've had in a long time.

The story begins with the "Development of the Design" with 12 pages and 27 photos. This is followed by 9 pages on the He 115 in non-German air forces: Swedish AF with 4 photos, Finnish AF with 5 photos, Norwegian AF with 2 photos, and in Spain and England with one photo (RAF). The next 13 pages (with 30 photos) are devoted to He 115 in Luftwaffe service during the Phoney War, Battle of Norway, Battle of France, Battle of Britain, and Campaign against Allied Shipping. The reproduction of the photos is excellent.

The 4-page section is devoted to "Camouflage and Markings" describes the color schemes and markings carried by German, Norwegian, Finnish, and Swedish aircraft.

As usual with books coming out of Poland, the scale and color drawings are superb. There are ten 1/72-scale side-view drawings showing all versions of the He 115, and 1/72-scale 3-view drawings for the two main variants, the A-2 and B-1. Color side-view drawings are provided for ten He 115s in German markings, one in Condor Legion markings, two in Finnish markings, and one each in Norwegian, Swedish, & RAF markings.

The Pegaz book on the Heinkel He 115 is highly recommended to all enthusiasts of Scandinavian aviation and is a "must" for any modeler who has a couple of unbuilt Matchbox kit lying around.

[Editor's note: The member who provided this book for review was anonymous. Please let me know your name so I can credit your account.]

Beechcraft C 45, Monografie Aeronautiche Italiane. Price and availability unknown.

This Profile-like publication (16 pages, 17 cm by 24 cm) covers the history of the Italian Air Force's C-45 Expeditors. The Italian text is complimented by 27 b&w and one color cover photo, one color 4-view drawing, and one color side-view drawing (all in Italian AF markings). The reproduction of the photos is excellent and the color art work is acceptable.

Because of the Italian text and the relative simplicity of C-45 color schemes, this monograph can be recommended only to enthusiasts of either the Italian Air Force or the dear old "Bug Smasher".

Review copy provided by Roberto Gentilli.

Fizir i njegovi avioni: Kronologija zivota i rada konstruktora, by Boris Puhlovski. Zagreb, 1991.

A few years back, in a postscript to an SAFO article on the Fizir amphibian, the editor expressed interest in learning more about this little-known designer. In response, SAFO-friend Roberto Gentilli sent your editor this book on the life of Fizir and his aircraft.

This small book, A5(?) size, has 110 pages. The text and photo captions are entirely in Croatian. The first 57 pages are devoted to the life of Rudolf Fizir (1891-1960) and his career in aviation. This section contains 34 photos, of which about half are of Fizir, his family, and places important in his life. The other half are of aircraft on which he worked, e.g. Brandenburgs in Yugoslav AF markings, and Fizir aircraft in various stages of construction.

The remainder of the book is devoted to a type-by-type discussion of Fizir aircraft: 'Mali' and 'Srednji' Brandenburgs, Fizir I sports biplane, "Amfibija" (which was the subject of the SAFO article), the handsome Fizir FN and Fizir-Stankov FP biplanes, the Fizir FT monoplane, the PVT and R parasolwing RYAF trainers, and the FA-2 amphibian of post-war design. Technical data are given for each type and there several photos (a total of 37), including float plane versions, for each type. The reproduction of the photos varies from fair to good. Unfortunately, there is only one 3-view drawing and that is for the post-war amphibian.

Fizir i njegovi avioni provides an tantalizing glimpse of a talented airplane designer who is little known outside of his native country. Because of its Croatian text, impenetrable to the average English speaking aviation enthusiast, it is recommended only for those with an intense desire to learn more about Fizir aircraft.

Review copy provided by Roberto Gentilli.

Arsenal VG.33, by Christian-Jacques Ehrengardt. Aero Files #1. Aero-Editions, 20 Blvd. Paul Valery, F-32500 Fleurance, France. \$4.00 plus \$1.00 for air mail delivery.

The saying 'Great things come in small packages' was never truer than for this little monograph. It consists of only 16 pages and measuring a mere 15.5 cm by 23 cm (6 inch by 8 inch), but with a text entirely in English and packed with photos and color drawings, it's a real gem.

The development of this series of attractive low-wing, wooden fighters is chronicled from the VG.30 prototype through the VG.39. The text begins with a brief summary of the history of the Arsenal company following its foundation after the nationalization of the French aircraft industry in 1936. This includes the design of a 4-engine double-decker passenger plane using 8 coupled engines and its scaled-down test-bed designated VG.10, and the design of the VG.20, a mid-wing monoplane fighter with coupled engines driving counter rotating propellers. This latter flew in the post-war period as the VB.10.

This is followed by a discussion of the VG.30 series accompanied by 4 photos and 7 color side-view drawings (VG.30, .32, .33, .34, .36, & .39). The history of the VG.33 begins with description of the 5 pre-production prototypes, and then proceeds to describe the acceptance trails, series production, deliveries, and the survivors. This section is illustrated by 8 photos, a sectional side-view drawing, a drawing of the instrument panel, a color 5-view drawing, and 2 color side-view drawings, one in French markings and one in Luftwaffe markings. In a "Post Mortem" the author wonders what the history of the VG.33 would have been had the French aircraft industry had been able to meet the

production schedule envisioned for the aircraft. Would it have been "France's wooden wonder?" We will never know, but at least the VG.33 provides the aviation enthusiast and modeler with a very attractive bit of history.

Aero Files monograph on the Arsenal VG.33 is an outstanding publication at a very reasonable price that deserves to be in the collection of everyone interested in the aircraft of WWII. This review wishes Aero Files success and eagerly awaits the next publication in this promising new series.

Review copy provided by Philippe Listemann of Aero Editions.

Polish Military Equipment: Technika Wojska Polskiego. 272 pages, 18 cm by 25 cm (landscape). Hardbound. Bellona Publishing House, ul. Grzybowska, 00-844 Warszawa, Poland. E-mail: biuro@bellona.pl. Home page: www.bellona.pl

This book, with parallel Polish/English text, covers all items of military equipment currently in use by NATO's new member. Chapters cover: small arms, surface-to-surface missiles, ground-to-air missiles, artillery, armored vehicles, communications, radar, electronic warfare, aircraft, naval vessels, chemical defence, and logistic support. Each item is covered in at least one page and one color photo, with the major systems getting a couple more pages and photos. The text gives a brief description of the development and use of the equipment along with technical specifications. The reproduction of the photos is excellent and the colors appear true to life.

There's not much new here for the aviation enthusiast, although the colors, especially of the helicopters, should help get the modeling juices flowing. The naval section is particularly good and includes photos of Kilo and Foxtrot submarines carry the Polish eagle. However, the real gems are found in the sections devoted to ground equipment, especially the seldom-illustrated radar and support equipment. The scratch-building modeler will find many interesting projects in these sections, and the diorama enthusiasts will gain much inspiration from photos showing a variety of vehicles clustered together in operational (not forced) settings.

Technika Wojska Polskiego is recommended to all enthusiasts of military equipment and especially to any modeler looking for interesting scratch-building or diorama projects. [Editor's note: The review copy is available from the SAFCH Sales Service.]

"MAI has managed to find the last remaining hard-cover TAB-Books edition of their original book, the *Encyclopedia of 1/72 Scale Military Models*. They have enough copies to be able to afford to sell this full-color book for \$15 (California tax \$1.09) to US customers. Add \$2 for shipping outside the USA. Payment by check or money order in US\$ drawn on a US bank to: Model-Aire International, PO Box 554, Corte Madera, CA 94976-0554, USA."

The following books have been received, but have not yet been reviewed.

Mustangs over Korea, The North American F-51 at War 1950-1953, by David McLaren. Schiffer Publishing Ltd., 4880 Lower Valley Rd., Atglen, PA 19310. \$45.00 plus \$3.95 postage.

French Aeroplanes before the Great War, by Leonard E. Opdycke. Schiffer Publishing Ltd., 4880 Lower Valley Rd., Atglen, PA 19310. \$59.95 plus \$3.95 postage.

Aero Journal is published bimonthly by Aero Editions, 50 blvd Paul Valery, 32500 Fleurance, France. Subscription to 6 issues (one year) is about US \$40.00 (including air mail) depending on current currency-exchange rate. Payment by Visa or Master card. E-mail: aerjournal@infonice.fr. Just received from France are two issues of a fairly new aviation magazine, **Aero Journal**. Their main areas of interest are "French and German military aviation, but also other air forces when good articles are available".

Aero Journal is an A-4 size magazine with 72 pages printed on high-quality glossy paper. There are lots of photos and lots of color drawings. An insert provides the complete English-language text for the two lead articles in each issue. A summary of the contents of issue #8 should give a good idea of their editorial proclivities.

The lead article is the first of a two-part series on the Glenn Martin 167 in French service. The text (completely translated perfect idiomatic English in 6+ large pages in small print) describes the operation of the Glenns (Army de l'Aire name) during the Battle of France providing details of what appears to be every mission, combat against Italy in the Mediterranean, service with the Aeronavale (where they were called "Martin 167F", never "Glenn"), reorganization under the Vichy government, actions against the Free French forces in French West Africa and Gabon, attacks on Gibraltar, blockade runners to Djibouti and Madagascar, fighting the British in Syria, and resisting the Allied landing in North Africa. This fantastic story is complimented by 26 photos and 5 pages of color drawings which include aircraft in the markings of the Army de l'Aire, Aeronavale, and Vichy operating in France, Morocco, Algeria, Senegal, Mali, Lebanon, Djibouti, and Syria. The second part of this series will cover 167s operating with the Free French and over the Atlantic Pockets.

The second feature article in this issue is on the use of gliders in WWII by the USAAF. The title, "Pilots Expandable" (I think they mean "Expendable"), is one of the few translation mistakes I found. The story is a no-holds-barred telling of the inadequacies in the training and equipment of the crews sent into combat in Western Europe. There are 7 photos of Waco gliders and 4 color side-view drawings (DFS 230, Go 242, Waco CG-4, and Horsa). Other articles of interest to SAFO readers include: (1) "Deux combats franco-italiens" describing the combat of French P-47s and B-26 against Italian ANR Bf 109Gs and includes 8 photos and color side-view drawings of a French P-47D and 3 Italian Bf 109Gs. (2) Two pages of color side-view drawings of aircraft decorated with shark mouths: Swiss Bf 109, Flying Tiger P-40, Finnish MS-406, Iraqi Me 110, Bolivian P-47, Soviet La-5, RAF Kittyhawk, USAF L-5, Normandie Yak-9, and RAF Defiant. (3) Part 8 of a series on "La chasse française 1939-1945" is on GC III/2 Alsace (341 Squadron) and has 6 photos, tables on aircraft types used, commanders, crew killed or taken prisoner, air fields, victories, and 5 color side-view drawings (Hurricane and MS-406 carrying large "Cross of Lorraine" insignia and three Spitfire IXs in RAF markings with small "Cross of Lorraine" insignia). Other articles are equally well-done, but lie outside the direct interest of the SAFO are: (1) "Operation Beethoven: La symphonie inachevée" on the Luftwaffe Mistel program including 5 photos and 2 color side-view drawings of Ju 88/Fw 190 combinations. (2) The installment on "Camouflage et

marques" series is on Luftwaffe fighter Staffel markings and includes 14 photos, 6 color side-view drawings, and 2 pages of tables in color. (3) This issue's article on "Les as de l'aviation" series is on Sgt Satochi Anabuki and includes 3 color side-view drawings of his Ki-43s including the one he flew when he shot down a B-24 over Burma. (4) The back cover consists of a color 3-view drawing of P-51D 'QO-A' 'Man O'War' of LtCol Kinnard. **Aero Journal** is an excellent magazine with well-researched historical articles backed up with appropriate photos and excellent color drawings. For example, in the article on the attack on Rebaul in issue #4 all the photos and drawings are of aircraft that took part in the attack. If the French air forces are your "thing", then this magazine can be highly recommended. Also, I cannot imagine any modeler worth his salt looking at the color drawings of the Vichy Martin 167s and not wishing that he had more Frog Marylands stashed away in the "loft" ("attic" to our North American readers).

Aero Magazin. With the re-establishment of contact with SAFCH members in Serbia came a copy of the Serbian aviation magazine, **Aero Magazin**. The July/August 1999 issue of this glossy, full color magazine consists of 36 A-4 size pages with a text entirely in the Serbian language. The many color photos are well produced and provide a guide to the content for the reader entirely unfamiliar with the Serbian language. The emphasis is on contemporary aviation, although the issue at hand has 3 pages devoted to historical subjects and one page of kit reviews.

The July/August 1999 issue begins with 5 pages of news from around the world. Then there's a 4 pages article on the "Jak-130". The article, "Kad Maketarstvo Zivot Znaci", is about wooden MiG-29s in Serbian markings (decoys?) including 8 color photos showing the construction, the finished product in an accurate color scheme, and the wreckage of what may be one hit by NATO bombs. One of the photos shows 5 wooden radomes under construction, so there must have been more than one of these wooden MiG-29 built. Other articles include: "Tunguska" a self-propelled surface-to-surface rocket system. "Mulk Zemaljskih Radara" NATO radar operations(?), "Protivbrodske Rakete Harpun" Harpoon missile. "Komfor Putnicki Kabina" plush airline seats. The historical articles are "Dvina" u Zastiti Vijetnamskog Neba" on SAM missile performance in Vietnam including two tables, and "Hostoria Magistra Vitae Est!" biographies of two Serbian aviators, one from WWII and one from today. The model page presents reviews of 3 kits.

Aero Magazin is definitely not for the average enthusiast. Too much of it cover material already available in English, and the articles on Serbian topics will be unfathomable to anyone not able to read the text. However, if you can read Serbian, this magazine is definitely worth looking into. The review copy is available from the SAFCH Sales Service. Back issues and current issues are available from SAFCH member Vladimir Ristic (Bulevar Lenjina 103/27, 18000 Nis, Serbia, SR Yugoslavia) for \$7.00 each including postage.

[Editor's note: Vladimir can also provide the 1/72-scale YUMO kit of the Super Galeb G-4 for \$15.00 postage included.]

"I have recently received the latest issues of the Finnish magazine, *Suomen Ilmailuhistoriallinen*

Lethi (The Finnish Aviation Historical Magazine). I do not read Finnish, but the magazine comes with a condensed English summary which I found very helpful. Of course, the photographs and drawings need no translation. Their editorial office is: In-Scale 72 Production, Makelankatu 5 B 10, 00550 Helsinki, Finland."

1/1999: The cover has the classic photo of the Fokker G-1, but inside we find that this is a doctored photo, and is that of another G-1 altogether. Inside the front cover, another of Pentti Manninen's excellent three-views illustrates the Finnish VL Humu. This can be best described as their version of the Brewster Buffalo, but redesigned with local equipment, and with a wooden wing. Further in the magazine there is a five page detailed description and some photographs of this airplane, and how it deviated from the 'standard' Buffalo. This was very interesting, especially since I had thought that it was basically a redesign of the original, but there was a significant number of changes due to the differences in equipment. Basically we can say that they only looked alike, and then, only if you didn't know where to look! There is also an excellent article on the twin boom Fokker G-1 fighter. I was surprised to see that this design was actively being considered by the Finns for local construction, but in the end, nothing came of it. There are a pair of three-views of the G-1. One is of the prototype which was powered by the P&W Twin Wasp. The other is of the Mercury-powered version which was larger in virtually all major dimensions. The six-page article goes into the flight testing of this very advanced airplane which would have been a formidable weapon during the war, if it had been produced in service numbers. There is also a three page article on Hans Wind, who was a Finnish Ace, and holder of the Mannerheim Cross. The article is illustrated with six photos of Wind with his various Buffalos. Next we have a four-page article about the ferrying of a Piper J3C Cub from England to Finland in the Summer of 1951. The back cover has a series of six photos of some derelict fighters. Among the airplanes illustrated are a Fiat G-50, a P-40M, an I-15, a Blackburn Ripon, a Gloster Gladiator, and a LaGG-3. All are in various stages of decay, and they have useful information on the Finnish markings that these airplanes might have carried during the war years.

2/1999: The cover picture is of a very nice picture of the British jet fighter, the Folland 'Gnat', in Finnish service. The inside front cover has a picture of the Wartime Finnish Ace, Major Eino Loukanen, posing by the tail of his Brewster Buffalo, and showing off his seventeen victory marks. Rather than having a silhouette of his individual victory, he pasted a beer-bottle label on the vertical fin for each kill. This issue also has a side view drawing of this Brewster, showing these kill markings. This issue's feature article is the Folland Gnat. A major item is the schematic drawing showing the major control runs. As an aircraft engineer, [retired] I found it particularly interesting. The article also goes into some detail about the machinations of some of the Finnish left wing-politicians in trying to get Finland to buy MiG-15s. The five page article contains four photographs and two drawings. Then we have a three page article on the Piper J-3 in Finland which has two pictures. Then, a two-page article, which contains a three-view and a photo, covers the Hiller H-23B Helicopter in Finland. During the War, a legend

aircraft were housed in tents on the forward and aft decks. That must have been an interesting time! Three pictures illustrate the article. The back cover is of a Piper J3C-65 three view, really an L-4H. Gus Morris (SAFCH #3), 4709 Green Meadows, Torrance, CA 90505-5507, USA. E-mail: Cmmorris@aol.com

of an airliner body onto the wings and tail surfaces of the B-17B bomber. (Similar to the post-war Stratocruiser which married an airliner body to B-29 flying surfaces.) Only ten 307s were built, but they had such exciting lives that an entire book could be written on them. Space is available here for only a brief summary of their careers: The prototype crashed before delivery, 5 went to TWA, 3 to PamAm, and the last was a one-off 'Flying Penthouse' for Howard Hughes. In 1941, the 8 airline examples were taken over by the US Army as C-75s. Post-war, these returned to their original owners, but here is where the story starts to get confusing. The five TWA machines were extensively rebuilt with B-17G wings and tailplanes replacing the original B-17B parts. Externally, the most obvious change was the larger span tailplane which was moved back 3 feet. By the early '50s, all 307s had moved on from their original owners, beginning lives that were to cover the globe. Two went to Ecuador, one to the Haitian Army Air Corps, and others took up French civil registrations, mostly serving in Indo-China, at first with French companies, then later with local airlines in Laos, Cambodia & Vietnam. A couple of these served with the International Control Commission, flying between Saigon and Hanoi in the '60s. One was supposedly still flying in Laos into the '80s.

References: Air International, Jan/Feb 1994 and Air Enthusiast #10; these are basically the same article but AE10 includes a cutaway; AirPower 9/98 & Wings 10/98; a 2-part history with lots of photos. The Kit: What you get is more of a conversion kit than a "real" kit. In the box is a pair of fuselage halves plus the wings and tailplanes from A-Model's B-17E kit (which I think is the old Frog/Novo number), along with lots of bits for the spares box, such as machine guns, bomb racks, etc. Decals are given for pre-war TWA and PamAm a/c, plus a C-75. The fuselage halves are thickly and simply molded in off-white plastic. Only the cockpit windows are cut out, the cabin windows are merely recessed squares which will have to be cut out. There is no interior detail of any kind. The window arrangement, 11 to port and 8 to starboard, is correct, at least for some versions. The wings, being from the B-17 kit, have turbo-charger panels behind the wheel wells; these will have to be removed whichever variant is built. (The 307 didn't have turbos.) The slots for the turbos in the outer nacelles can either be filled in or used for the exhaust pipes on the rebuilt TWA version. Other alternation necessary to the wings are: The undercarriage openings on some 307s were simple ovals, whereas the kit has 'P'-shaped holes; the rear section of the outer nacelles underwing are the wrong shape (round instead of pointed as on the real 307); and the TWA rebuilds had fixed leading-edge slots near the wing tips.

The tailplanes need work whichever variant is being built. For the original version, the kit's B-17E tailplanes will have to be replaced with B-17B items, which were shorter in span and more 'triangular' in outline. For a 'rebuilt' version, the B-17E tailplanes are OK, but the fairings on the fuselage halves will have to be cut off and glued 0.5 inches further to the rear so that the trailing edge of the tailplane is in line with the end of the fuselage. Other differences include cabin window arrangement, intake & exhaust stack positions, aerial fits, some had astrodome on the cabin top, and at least one had a larger passenger door.

This kit is recommended only for enthusiasts of the type, especially as any builder is going to have to carefully study photographs of the exact machine being modeled; there were many, many differences

from one aircraft to another, especially in their later years.

All in all, not a kit for those who expect to build straight from the box, but, with work, a nice model can result. I think it'll look great alongside the other 'flying whale', the C-46. I obtained my copy from www.aviapress.com direct from Russia at a cost of \$15. Very reasonable considering what a resin-conversion kit for a 307 would cost!.

Sikorsky S.XVI, 1/72-scale injection molded kit. Denko.

This little kit's been around for a year or so, but it hasn't been reviewed in SAFO yet. This is a very nice and delicately molded kit that goes together with no more trouble than any other biplane kit. There are only two references: (1) The massive 'Imperial Russian Air Service' book by Durkota, Davey, and Kulikov and (2) the A4-sized monograph on the S.XVI by Polygon Press, Moscow. The kit is obviously based on the drawings in the IRAS book, since when the 1/48-scale 3-view is reduced to 1/72-scale, the kit fits like a glove. The trouble is that this source gives the length of the S.XVI as 5.9 m, while the Polygon book gives a length of 7 m. This is a difference of about 18%. Comparing the kit with photos doesn't resolve the problem, although the wing tips and tailplane shapes look closer to those shown in the Polygon book than in the IRAS book (at least I think so). The IRAS book does say that the 34 S.XVI were built in 5 separate batches and that dimensions did vary between batches. Could both sources be correct? Maybe one of our Russian readers (or the inestimable Harry Woodman, the expert on Sikorsky WWI products) can comment.

The only additions I had to make to the kit were to add a fuel tank on which the pilot's seat was mounted and a windscreen. The very nice little decal sheet provides markings for one Imperial Russian a/c. However, the Polygon book has side-views for Ukrainian nationalist and Soviet machines

A very nice little kit and it will look great when I've finished rigging it. I obtained both the kit (\$4.75) and the Polygon monograph (\$4) from the same source as the 307 Stratoliner kit. Note that these prices are considerably lower than in Britain.

John MacGregor (SAFCH #766), 13 Foggyley Gardens 21, Dundee, Scotland.

Sopwith 1-1/2 Strutter, 1/72-scale injection-molded kit, Toko.

The Ukrainian firm, Toko, has released kits of the Sopwith 1-1/2 Strutter in four versions: 2-seat fighter-recon, 2-seat trainer, single-seat bomber, and single-seat night fighter). The variant that will interest SAFO readers the most is the "standard" 2-seat fighter-recon model. In addition to extensive British and French, it was also used by the Imperial Russian, both sides in the Russian Civil War, the Ukraine Nationalists, and the air forces of Belgium, Estonia, Latvia, Lithuania, Romania, and Greece (at least). Others may have gone to South America. Even the US Navy used these as ship-board aircraft.

The kit itself is excellent; crisply and delicately molded with nice accurately-thin struts and well-done machine guns. Compared to the DataFile 1/72-scale drawings, accuracy seems virtually 100%. The only things I found wrong were the cockpit interior, which is entirely fictitious (before going to work on the pilot's cockpit, note that once the top wing goes on you can't see into it), the undercarriage legs look a tad too long, and if you put the rear center section struts in the holes provided, they sit

at the wrong angle (sitting vertically instead of sloping forwards). Decals are for two British a/c, one captured a/c in German markings, and tail stripes for a Latvian a/c.

The kit went together easily with only the slightest bit of sanding needed here and there. All in all, an excellent kit, thoroughly recommended to. It's probably the best WWI kit since Airfix's lovely little Pup.

John MacGregor (SAFCH #766), 13 Foggyley Gardens 21, Dundee, Scotland.

Aviatik (Berg) D.I, 1/72-scale injection-molded kit. Toko.

Austria-Hungary's first indigenous fighter has also been kitted by Toko. The variant modeled has the car-type radiator nose. All the comments about quality in the 1-1/2 Strutter review also apply to this kit; it is excellently done. One of the best things are the decals. Markings are provided for two aircraft: the a/c in which Austrian ace Linke-Crawford was killed and a Ukrainian Nationalist a/c. Also provided are decals for the Austrian lozenge-type camouflage applied to this type. The bad news is that the colors of the lozenge camouflage don't look quite right, but this can be checked out in SAFO #43 which has an article on Austrian lozenge camouflage concentrating specifically on the Berg D.I. The Ukrainian markings don't look right either; the blue being very light; these can be replaced by the Blue Rider decals for the Ukrainian Fokker D.VII.

The Aviatik D.I is another kit with great small air force potential. In addition to Austria-Hungary and the Ukraine, the D.I was used by virtually all of the A-H Empire's "successor states". The Austrian Republic, the Hungarian Soviet Republic, the Yugoslavs and the Czechs all used it and some may have gone to Poland and Romania as well. In addition to SAFO #43, the only other reference I found for the D.I was an article in Air Enthusiast #21 which describes the aircraft at length and has color side views and a cutaway.

John MacGregor (SAFCH #766), 13 Foggyley Gardens 21, Dundee, Scotland.

Hansa-Brandenburg D.I, 1/72-scale injection-molded kit. Toko.

This H-B D.I was known as the "star-strutter" because of its unusual wing-strut arrangement. Again, all the above comments apply to this kit, but construction is a bit tricky due to those "star-struts". In the kit these are provided as four "X"s so a bit of thought, a little cutting, and a good 3-view is required. But there is a plus side; virtually no rigging is required to complete the model - oh Joy! The decals again are something special. Codes for 2 a/c in the "65" series are provided, one for the ace Bromowski's a/c. However, you also get wood-grain decals for the fuselage and Austrian "swirl"-type camouflage decals for the wing upper surfaces. A nice touch!

The only reference I could find for this a/c was a 3-view in the Harlyford aircraft of WWI A-4 size softback (3 volumes of aircraft drawings in 1/72-scale sale) released a few years ago.

If not strictly a small air force type (although the post-war Austrian Republic had one, see SAFO #25 on the Carinthian Air War), this odd little aircraft will appeal widely to SAFCH members simply because of its strangeness.

All these Toko kits are currently available, in Britain at least, for a very reasonable £4.75 each (about \$7).

John MacGregor (SAFCH #766), 13 Foggyley Gardens 21, Dundee, Scotland.

International Alouette IIIs plus Irish Air Corps Update, 1/72-scale decals. Max Decals #7204 £6.50. Joe Maxwell, 67 Skreen Road, Navan Road, Dublin 7, Ireland. E-mail MaxwellJ@dcu.ie

"Bonanza" is not only the name of an old TV Western, but it is a word that aptly describes this latest decals sheet from Max Decals in Ireland. Included on one 15 cm by 22 cm (6 inch by 8.5 inch) decal sheet are national insignia and markings for 19 Alouettes representing the various air units of no less than 11 countries. Many of the national markings have never before, to my knowledge, appeared in decals form.

Countries and air arms represented include: (1) Argentine Navy 'H-115' and 'H-23'; (2) Netherlands AF Grasshopper Display Team 'S-350' and SAR Flight 'H-81'; (3) Greek Navy; (4) Malta '9H-AAV' and '9H-ADA'; (5) Switzerland 'V-206' in high-visibility finish and 'V-282'; (6) Romania IAR 316 '39'; (7) Indian Navy 'IN479'; (8) Pakistan AF '5412' and '1996' and Navy '2387'; (9) Nepal 'RAN-16'; (10) Denmark 'M-388'; (11) Ireland '197' and '197' and '212' in special markings commemorating 30 years of IAC Alouette operations.

The Irish Update decals are to be used in conjunction with Max Decals sheet 7201. Decals are included for (1) Reims Cessna 172 Rocket '203' marked to commemorate 25 years of IAC operations; (2) St. Brenden the Navigator badge for Dauphin '244'; (3) Basic Flying Training Squadron badge for Chipmunk '171'; (4) 75th anniversary badge for Gazelle '237'; and (5) complete markings for IAC Gulfstream '251'.

If this weren't enough for one decal sheet, there are complete markings for a Swedish AF Gulfstream Tp102 '021'.

The decals are of the highest quality with accurate colors, sharp printing, and perfect registration. The 6-page instruction booklet gives drawings of each aircraft with complete information on the placement of the decals, color scheme specifications, and

any major modifications such as floats, radar nose, etc. However, they do warn that the drawings are generic and the modeler should consult the references given to determine aerial fit and other minor details. While the drawings in the instructions are in black and white, full color instructions are available on the Web at <http://www.geocities.com/CapeCanaveral/Launchpad/6787>.

Even if you don't look forward to building 19 Alouettes, every modeler of the aircraft of the smaller countries will want to purchase this sheet not only to build a couple of Alouettes to fill out his/her list of countries (Do you have Nepal represented in your collection?) and then use the other national insignia for finishing some aircraft in exotic markings. For example, how about using the Maltese national insignia on a Cessna 172 or the Argentine Navy insignia on a T-28 Fennec as illustrated in Jorge Nunez's Serie Aeronaval #10? But beware, the Pakistan, Indian, and Greek Navy Alouettes are so attractive, you may find yourself looking for more Heller kits of the Alouette.

In conclusion, this is, without a doubt, the best single decal sheet for the small-air-force modeler to have ever been produced. I advise you to get more than one set.

Review copy provided by Joe Maxwell of Max Decals.

Finnish Air Force National Markings since 1945. Kuivalainen Decals #001. Firma Kuivalainen, PL 56 FIN-00241 Helsinki, Finland.

This, the first decal sheet produced by SAFCH member Martti Kuivalainen, is a 14.5 cm by 23 cm (5.75 inch by 9 inch) sheet containing 151 Finnish roundels in a variety of sizes, some with a black border and some without. These decals can be used on aircraft models (excluding WWII types and prototypes) in 1/72, 1/48 and 1/32 scale and for armored vehicles in 1/72 and 1/35 scale. The instruction sheet lists 33 aircraft types along with the

full-scale size of the roundels on the fuselage and wings. Notations on the decal sheet identify which decals to use for a given full-size roundel in each scale. This is a nice feature that eliminates the need to make accurate measurements of roundels that measure in diameter from 1.67 cm down to 0.21 cm.

The decals are in perfect register and appear to be sufficiently dense to prevent the base color of the model from bleeding through the white.

US sources (beside SAFCH) are Linden Hill, NY and Aviation USK, WA. They can also be ordered directly from Martti at the address above. Retail price is US\$ 7.50 outside the European Union or 8.40 EUR within the EU. Visa/Mastercard accepted.

Martti writes, "I specialize in models, decals, etc. of Finnish AF aircraft, and hope to be of help to all interested in them. For more information, write to me or see my web site at www.kolumbus.fi/martti.kuivalainen.

Mitsubishi Ki-51 Sonia and Kawasaki Ki-45 Nick, 1/48-scale decals. Hobic Mail Order.

This package of two decal sheets (13 cm by 18 cm) includes national insignia, unit tail insignia, and fuselage markings for 5 Ki-45s and national insignia and unit tail insignia for 10 Ki-51s. The decals are well produced with dense colors, sharp printing, and perfect register. The 2-page instruction sheet provides side-view drawings for all aircraft and generic top and bottom plan view. The text is entirely in Japanese, so you'll need additional references for the correct choice of colors.

This excellent sheet was available once before from the SAFCH Sales Service and it was snapped up very quickly. Since only two sets are available and no further sets are anticipated, you might want to act quickly so as to be disappointed.

wants & disposals: Continued from page 75.

1945), China (Nanking), Indonesia (late-1945) Manchukuo, and Thailand (1940-1945). Information on aircraft, marking, units, personnel, uniforms, and operational histories is wanted." John Berger (SAFCH #1389), PO Box 23109, Honolulu HI 96823.

"I would greatly appreciate any information relating to the following: (1) Any information on the units/pilots of the Fw-190s involved in shooting down RAF Defiant 'V1117' (277 Squadron) on 25 July 1942 over the English Channel off Dunkirk. There may have also been Spitfires involved in this engagement. Also looking for the full code (BA-?) of this Defiant. (2) Photographs/detailed information on the markings/color scheme of the Zero flown by IJN pilot Osamu Kudo of the 3rd Kokutai, shot down by ground fire on 3 March 1942 during an attack on Broome, Australia. (3) Full code (RA-?) of RAF 208 Squadron Spitfire FR18 'TP340' shot down on 7 January 1949 by Israeli AF pilot Chal-

mers 'Slick' Goodlin over the Israeli/Egyptian frontier."

Charles Jarrells (SAFCH #1558), 3580 Timbrook Ct., Dayton, OH 45431.

"Wanted: Any information on the color schemes of P2V-1's in French service, Indochina, 1946-54, and Indonesian Mavis 1 + 946-48. I would appreciate any help."

Charles Euripides (SAFCH #1286), 4508 Willow Croft Court, Charlotte, NC 28226, USA.

"I am preparing a multi-lingual dictionary of modeling term, but I am hampered by the fact that his word processor lacks alphabets for Eastern European languages such as Polish, Czech, Romania, etc., I've tried to find out how to add these to my system but without success. Can anyone can help?"

Mauro Conti, Via Tombe 22, 40022 Castel de Rio (BO), Italy.

[Editor's note: I have the same problem publishing articles on Eastern European aviation, so if you can help Mauro, I would appreciate hearing you at the

editorial address.]

"I am trying to obtain a copy (or photocopies of the WWI section) of Bower's 'Curtiss Aircraft 1907-1947'. This book, in the Putnam series, has long been out of print."

Colin Owers (SAFCH #261), PO Box 73, Boorowa, NSW 2586, Australia.

"To complete my collection of 3-view drawings of aircraft used by the Philippines Air Force, I still need the following planes (with cross-sections): Stinson Reliant SR7 & SR9; Siai Marchetti S-211; Aero Commander YL-26; Fairchild C-123K Provider; Fokker F-27 Friendship; Sikorsky S-62 & S-76A; McDonnell Douglas MG-520 Defender; and Bell 212, 214, and 412 Huey family helicopters. "As part of a club project, we need information on the types of aircraft flown by North Korea and North Vietnam during their respective wars. Information is particularly needed on the types of helicopters used."

Bert Anido, PO Box 2473 MCPO, Makati City 1200, Philippines. E-mail: aanido@evoserve.com

Esquadilha da Fumaca: Força Aérea Brasileira. This video tape, recorded in the NTSC system [Editor's note: I don't know what NTSC is, but this tape plays very well on my VHS system], was produced by Esquadrao de Dimonstracao Aerea. It features the Esquadilha da Fumaca and covers its history, its base at the Academia da Força Aérea in Pirassununga (Sao Paulo State), plus interviews with pilots and footage of their acrobatic display. Running time is about 40 minutes. The narrative is in Portuguese and, while most of the footage is of Esquadilha da Fumaca's Tucanos in action, there are quite a few interviews with officers and pilots that will baffle the non-Portuguese speaking viewers. The program begins with a short visual summary of the equipment used by the present-day Brazilian Air Force including Northrop F-5E, Bandairante, C-130, and Bell helicopters. This is followed by scenes of aircraft previously flown by the EdF including T-6 Texans, Super Magisters, and T-25 Universals. The T-6 and Magister footage was obviously copied from film and is grainy and of poor color quality; the Universal footage is short, but excellent. This takes up the first 10 minutes. The remaining time is devoted to the EdF's Tucanos. The team is shown flying demonstrations at various cities in Brazil and in Canada, Chile, and Argentina. There is a short section on the training of cadets at the Air Force Academy. Interspersed among the interviews and views of spectators getting their tonsils sunburnt, the majority of time is spent showing the various maneuvers performed by the team with the name of the maneuver captioned on the screen. This video kept the attention of my aviation-neutral wife. She was particularly impressed with the final scene in which seven Tucanos taxi in after a show, turn in unison, and taxi in a perfectly straight line to a stop with their nose wheels exactly

on a line marked on the runway. "Just like the chorus line in a ballet", she said. Esquadilha da Fumaca is an excellent video that will entrance any devotee of the acrobatic teams of the smaller air forces. The review copy is available from the SAFCH Sales Service for \$25.00 on a first-come-first-served basis. Additional copies can be obtained from: Sergio Luis dos Santos, Rua Jardim Botânico 647/301, Rio de Janeiro, 22470-050, Brasil. Be sure to include addition money for postage.

Brazilian Postage Stamps and First Day Covers. The Brazilian Postal Service has released series of three stamps commemorating the centenary of Santos Dumont's dirigible flights. The first pair of these stamps, each with face value R\$ 0.31, were released in 1998. One bears the familiar portrait of Santos Dumont with a free balloons in the background. The second stamp shows Santos Dumont in a gondola with his dirigible #1 in the background.

A third stamp was released in 1999. It commemorates Santos Dumont's November 1898 flight, in his dirigible #3, around the Eiffel Tower. The face value of this stamp is R\$ 1.20 and it has a portrait of Santos Dumont with his dirigible #3 in the background.

Another stamp released by Brazil in 1999 is a R\$ 0.51 issue commemorating the 30th anniversary of the 6th Air Transport Squadron (6th ETA). This stamp features a camouflaged C-95C Bandairante and the symbol of the Brazilian Air Force.

One each, first day covers for these stamps are available from the SAFCH Sales Service. The R\$ 0.31 stamps appear together on one envelop cancelled 18/7/98, the R\$ 0.51 stamps in dated 12/5/99, and the R\$ 1.20 20/7/99.

[Editor's note: Since I have no idea what these

stamps are worth beyond their face values, they will go to the bidder who offers the highest amount in a letter received before 1 January 2000.]

For anyone addicted to Radio Control Flying Boats, Gene Falada has drawings for construction of large-scale models. For example, Heinkel He 115 (109 inch wing span), Dornier Wal (76 inch wing span), and Antonov An-2 (98 inch wing span). Contact Gene Falada, 22W 070 Byron Ave., Addison, IL 60101, USA.

"Eagle Press is the only Italian Press Agency specializing in both real military aircraft and plastic scale modeling. Their Web Site now has started an Italian aircraft modeling discussion group with articles from all around the world, a gallery of Italian-built models, and a series of Italian Aircraft Special Pages. See our Web Site at www.mcair.it/eaglepress."

Giovanni Galvan (SAFCH #1447), Via Paulo V 13, 00167 Rome, Italy.

"Are any of our members interested in computer-generated cloth patches of the Philippine Air Force 5th Fighter Wing? These patches are 4-inch size, full color, and are the 5th, 6th, and 9th Fighter Squadrons and the 105th Combat Crew Training Squadron for a total of 6 patches per set for US \$35.00 air mail anywhere in the world.

"This may sound wierd, seeing these countries are our neighbors in Asia, but would you know of any members have patches to trade from Vietnam, Burma/Myanmar, Laos, Cambodia, South Korea, as well as Latin American countries?"

Bert Anido, PO Box 2473 MCPO, Makati City 1200, Philippines. E-mail: aanido@evoserve.com

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"Let me make a few remarks concerning the drawings in SAFO #88 of the Finnish Brewster B-239. In the initial 'silver' scheme, the serials were also displayed beneath the wings. This was required by the Swedish authorities for all a/c crossing their airspace on the way to Finland, and it a feature also found on the MS.406s and Fiat G.50s used by the FAF. Interestingly, BW-370 had no serial beneath the wings when it was used to test skis at the State Aircraft Factory in spring of 1940. The skis were not accepted for production and they were removed before BW-370 joined its unit.

"BW-374 still had underwing serials when photographed in March '42, thereby emphasizing the fact that at the beginning of the Continuation War only the black and green camouflage was added leaving the undersides in natural metal. Also note the photos of Finnish B-239s where traces of silver can still be seen around the serial and the canopy.

"Light blue as an underside color was not introduced until May '42, and then only to be applied during a major overhaul. So BW-393 and 388 most probably had light grey undersides.

"The above comments as constructive criticism of a very good article. And let me thank you for the article about the Argentine Dewoitines; a model of one is well under way."

Nils Treichel (SAFCH #1467), Ludwigstr. 13, 27432 Bremervoerde, Germany.

"I'd like to comment on the Belgian Buffalo article in SAFO #89 and try to dispel a couple of Buffalo myths. (1) No Buffalos went to 128 Sqd. in Sierra Leone; this squadron had only Hurricanes. This chestnut goes back, I think, to a photo caption in a 1970s Airfix Magazine showing a Buffalo in RAF C-type roundels. (2) The story of the Buffalos in Crete is well told in Chris Shores' 'Air War over Greece, Yugoslavia and Crete'. In summary: 6 March 1941, three Buffalos (AS419, 420 and AX814) of 805 Sqd. Fleet Air Arm fly to Malene, Crete, from Egypt. The COs comments (page 141): 'A delight to fly - very maneuverable (compared to the Fulmar). It would have been an excellent fighter but the guns could not be fired because the ends of wires which were part of the interrupter gear, failed and 805 did not have the necessary spares. At no time did I request the Buffalos be exchanged for Sea Gladiators but I do remember that in the light of the inadequacy of the Fulmars against the Fiat CR.42s I requested that the Sea Gladiators, if not required for other operations, should be sent to Malene to reinforce 805'. 19 March Buffalo AS419 and three Fulmars takeoff to intercept Italian SM.79s. The Buffalo suffers engine failure and turns back to Malene, but crashes short of the field and turns over. By the time of the German invasion of Crete in late May, the other two Buffalos were u/s due to lack of spares. The book (AWGYC) also has a photo of one of these (coded 'Z') on page 363."

John MacGregor (SAFCH #766), 13 Foggyley Gardens, Dundee DD2 3LG, Scotland.

"I have finally had a chance to catch up on some of reading of late, and finally got to digest SAFO #89. I have a few comments on the most welcome article by my very good friend Tony Sapientza on Beechcraft aircraft in Paraguay - the Beech 18 series are amongst my favorite aircraft, and they have been largely ignored by historians.

"The information that Tony adds to the subject is excellent, but there seems to be something amiss somewhere. Those first two aircraft he cited (the Lend-Lease UC-45Fs) on Project PG-74 had originally been planned to total six aircraft, but the number was reduced to two after the US attache in Asuncion was questioned about the actual needs of the service. The next mention of the aircraft found in Air Order of Battle intelligence documents was dated 31 October 1947. This report, strangely, reflected only one UC-45F but, more significantly, one AT-11 converted to transport configuration. The American Republics Project (successor to LendLease) had programmed Paraguay to receive a total of three Beechcraft aircraft ('to consist of either C-45, AT-7 or AT-11 types') but it is not clear from available records if any of these were actually received. The presence on the 31 October 1947 AOB of the 'converted AT-11' rather suggests that at least one aircraft from ARP may have been delivered. Later AOB reports, dated December

1955 and 31 July 1957, both reflected one AT-11 in the FAP, which conflicts with Tony's report that the single AT-11 he documents was acquired in 1958. "A 30 June 1954 report, however, is interesting in that it showed the FAP with only one UC-45F 'not operational, in Brazil.' Perhaps it was in Brazil for overhaul? Since Tony reported that T-5 was wfu in 1949, this appears correct. A 1958 report, however, stated that Paraguay had requested permission for FAP C-45 aircraft ZP-CBB and ZP-CBI to overfly Brazilian territory. These were almost certainly LATN aircraft however, probably crewed by FAP pilots. The connection of LATN at that juncture with the FAP may be worth exploring, as the AOBs of the period invariably placed aircraft of LATN under FAP control.

"The Beech 35 Bonanza situation is also a little unclear. If the FAP serials and manufacturers serials that Tony lists are correct, why would Bonanza T-9 be requested clearance to overfly Brazilian territory on delivery in 1958? Tony stated it was acquired in February 1955. My own belief is that the total of Beech 35s acquired by Paraguay was greater than five. A report dated 21 June 1950, for instance, noted the delivery of two Beech 35s that month at the airfield of the Aero Club de Paraguay, both for the FAP. One was outfitted as an ambulance and the other as a staff transport for the Ministry of National Defense. Yet the aircraft that Tony lists show none acquired in June 1950! An intelligence report dated 6 August 1954 reported that the same Nicolas Bo was '... negotiating the purchase of four Beech 35s for the FAP, as well as two Bell 47s and three DC-3s.; Another Beech 35 that may be a candidate for the FAP is P35 c/n D.7257 which is reported to have been acquired circa July 1963, although I have no other confirmation on this. Thus, taken all together, it would appear from the foregoing that Paraguay must have acquired and operated at least six Beech 35s, and a potential total of as many as eight. Tony did not list Beech 65-90 King Air ZP-TJW, which was in service with the Paraguayan Presidential Flight as early as 4 November 1996. It is assumed that the aircraft was operated by an FAP crew.

"Finally, Tony didn't mention that Paraguay had attempted to gain approval for export licenses for five Beech 45 Mentor's circa 29 June 1950, each equipped to mount 2.25-in. rockets - and one of which was to be equipped as a photo recon aircraft! The US State Department nixed this sale due to the unstable political situation of the time. However, that is not the end of the story. Beech T-34 ZP-XEA (also known locally as Paraguay 1) was an armed T-34 development that was demonstrated to the FAP at length, but was apparently finally returned to Beech when no sales materialized. I have photos of this aircraft, as does Tony, dated October 1991."

Dan Hagedorn, (SAFCH #394), 13125 Pennerview Lane, Fairfax, VA 22033, USA.

"I have just come back from two weeks in Washington and am trying to catch up now before I get bogged down in something else. I spent nearly all my time in the National Archives. It really amazes me the amount of material that is available which is not used by any of the Americans who have easier access to it than me.

"I now know why one sees the same photos repeated for the US Navy in Europe during WWI - there are no others in the Archives! It was a big disappointment. There will undoubtedly be others spread through the general collections, but in the

Navy records - the same few you see over and over! So, if you have any photos of US naval aircraft or RAF aircraft used by the US Navy in Europe during WWI, can you let me know. I was surprised to learn that they used Short 320-hp floatplanes.

I have enough material to put a piece together on the US Navy Dunkirk Hanriot HD-2 floatplanes, but need photos. Can you suggest a source - possible in France?

"In the Australian War Memorial, I have been going through the WWI files and found the following which are interesting:-

In his autobiographical manuscript, 'Years that have Flown', Rupert Uriah Hoddinott ended up in No.98 Squadron. He picked up a new DH.9 and, on return to the squadron, it was put into 'the workshops to be modified to squadron specifications - long exhaust pipes, machine gun under tail, squadron marks, etc.' Have you ever heard of this m-g installation before? The Farman Shorthorn was known as Rumpity (from Rumpity the cow). I have never heard this before, do you know what he alludes to?

Other of his comments: 'Another machine unpopular in Palestine was the DH.2 known there as the spinning incinerator.' Apparently a few spinning accidents saw the aircraft crash and burst into flames, the engine crushing the pilot. 'Another plane which was unpopular in Sinai was the Martinsyde Elephant. This was rumoured to shed its tail if dived too fast.' The DH.4 with Rolls Royce Eagle 8 engine: 'They were beautiful planes to fly and the engines were just perfect. They did not have to be humoured in any way but just followed the movement of the throttle as smoothly as silk.' He was not very keen on the Puma engine. He worked with the civil aviation dept. between the wars surveying aerodromes, etc.

"I have contacted a Czech guy who is talking about us collaborating on a LWF article. Have found a good period three-view which I will use as a base to redraft the type. Photos are still a problem, especially US ones."

Colin Owers (SAFCH #261), PO Box 73, Boorowa, NSW 2586, Australia.

"I came across some information in the 'Illustrated World War II Encyclopedia, published by H.S. Stattman, 1978, Vol 21. Perhaps our readers would be interested. These pages illustrate the following. Page 2937: Italian Air Force squadron insignia (color). Page 2938-2939: Polish, Finnish, Dutch, & French Air Force squadron insignia and Japanese Army training formation insignia (b&w). Page 2940: Japanese Air Force tail markings (color)." Francis Person (SAFCH #1391), 12830 Lakeview Dr., Lusby, MD 20657, USA.

[Editor's note: In the 23 years of its existence, the SAFO Letter Department never has had a serious controversy. Now it seems we have printed a letter with some serious mis-statements. The following letter sets the record straight. I hope this is the end of the affair.]

"This letter surely will be a surprise for you, but we need to clarify a very serious misunderstanding. We are referring to a letter that appeared in SAFO #79 on page 94 signed by Mr. Alfredo Jurado. I apologize for not writing sooner, but this letter was only brought to my attention a few days ago.

"We never have been members of a club called IPMS that is in Guayaquil, Ecuador, therefore we don't have any relationship with Mr. Jurado or the other persons mentioned by him in his letter. The persons mentioned in the letter, including Mr.

Jurado, have never been members of our society.

"We are the only modeling club legalized in Ecuador according to Ecuadorian Laws and Government requirements, as stated in the Official Ecuadorian Government Documents. We are the ASOCIACION DE MODELISTAS PLASTICOS DEL ECUADOR IPMS, with address and operations center located in Quito, Ecuador. Therefore, if there is another society with same name, it is illegal in Ecuador. We do not object to the existence of similar clubs or societies with similar names, and anyone can offer Ecuadorian decals. In his letter of 1996, Mr. Jurado offered to provide Ecuadorian decals. However, up to now (1999) he doesn't have any decals. We were so surprised and upset by Mr. Jurado's letter, that we are now trying to clear our name in spite of the long delay. (It's better late than never.)

"Our organization is a non-profit society of modelers and for modelers. Our philosophy is to help everyone build better models. We have meetings twice a month and we have workshops for beginners, contests, flea markets, conferences, etc. Some of our members are currently officers in the FAE (Ecuadorian Air Force) and also members of TELEGRAFO 1 (Ecuadorian Air Force Foundation for historical research, development, and museums). We have a direct relation with FAE (Ecuadorian Air Force). We always have been invited to FAE anniversary and, with our Society ID, access to FAE Headquarters and installations is possible without any other pass or authorization. Also, we have a permanent model show at FAE Headquarters in Quito. The FAE is the main sponsor for our annual contests which are held at FAE Headquarters. Our Society fits all requirements for a legal society: Directors are voted for in full democratic fashion every two year.

"We certificate that our decals are our exclusive property. Our decals were planned, designed, and produced for us in Quito, Ecuador. We never had these decals printed in another city or country. Mr Jurado, and the persons mentioned in his letter, don't have any share or participation in our decals. Our decals are accurate for all the sizes and scale drawings were checked by experienced members of our Society. These decals were sold around the world and no one has sent in a single complaint. If there are complaints about our decals, send us a letter and we will send a free replacement. Also refer to the note published in your magazine: Vol.19 no.2 (74) July 1995, page 59, where you reviewed our decals. If similar societies around the world write us requesting a sample of our decals for testing and evaluation purposes, we will send one free of charge.

"In order to clear our name and that the truth be known to all modelers, we would be very grateful if you would publish this letter in your magazine.

"We warn all modelers around the world that there is only one modeling Society fully legalized in Ecuador and recognized for Ecuadorian Government: IPMS ECUADOR located in Quito, Ecuador. Any other club that uses this, or any similar name, in Ecuador is illegal. Please consult to us first.

"I hope this clarifies the situation. Unfortunately, things like Mr Jurado's letter damage our image as Ecuadorian modelers. We apologize for everything, but, as you will understand, we have to clarify this. We are sending a copy of this letter to similar Societies around the world to clarify this matter as fast as possible. Thank you in advance for your support."

Pablo Proano, President, IPMS Ecuador, PO Box 21-917, Sucursal Eloy Alfaro, Quito, Ecuador.

